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ABSTRACT

This report, which is intended for technical institutions planning to use benchmark processes to facilitate change, contains five benchmarking studies describing future-oriented practices at two-year technical and community colleges that meet the design specifications stated in the report "New Designs for the Two-Year Institution of Higher Education." In each study, one of five program design elements--learning process, learning partnerships, learning staff and staff development, the learning environment (technology), and learning finance--is examined through a case study of a program or institution. Those programs and institutions are as follows: Consortium for Workforce Education and Lifelong Learning at San Diego Community College in San Diego, California; Fox Valley Technical College in Appleton, Wisconsin; Miami-Dade Community College in Miami, Florida; the Higher Education and Advanced Technology Center, which is a Colorado Community College and Occupational Education System innovation on the site of the former Lowry Air Force Base in Aurora, Colorado; and Sauk Valley Community College in Dixon, Illinois. Each benchmark study includes the following: contact persons, site selection, site background, process objectives, key features, impact, future directions, and design implications. A final chapter summarizes the studies and discusses their implications. The bibliography contains 78 references. (MN)

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BENCHMARKING NEW DESIGNS FOR THE TWO-YEAR INSTITUTION OF HIGHER EDUCATION

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MDS-1109/February 1998/$28.00

A Sourcebook for Reshaping the Community College: Curriculum Integration and the Multiple Domains of Career Preparation

Much confusion exists over the ways in which community colleges can address workforce preparation while fulfilling traditional educational goals. *A Sourcebook for Reshaping the Community College* clarifies the issue by identifying seven "domains of competency" that synthesize (1) the needs expressed by employers, (2) the skills students need to progress through postsecondary education and the labor market, and (3) the knowledge that educators have always wanted for their students. The book comes in two volumes: Volume I: Framework and Examples. Volume II: Samples of Career Preparation Innovations. By N. Badway, W. N. Grubb.
MDS-782/October 1997/$17.50

Work-Based Learning in Two-Year Colleges in the United States

This report documents the first of two studies on the status of work-based learning in America's community, junior, and technical colleges. The intent of this first study was to determine the aggregate depth, scope, and quality of work-based learning in the nation's two-year colleges. As school-to-work legislation overlays the nation's educational system, the overarching goal is to learn if America has or may soon have in place the structures to meet new federal directives. By D. D. Bragg, R. E. Hamm, K. A. Trinkle.
MDS-721/March 1995/$9.00

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The purpose of this report is to reinforce the conclusion made in the recently developed report *New Designs for the Two-Year Institution of Higher Education* (NDTYI) that many of the future-oriented design specifications could be found in practice within higher education institutions in the United States or internationally. This subsequent effort was designed to locate some of these institutions and detail their processes relating to one or more of the design specifications recommended in NDTYI.

A descriptive approach called benchmarking was used to describe processes meeting NDTYI design specifications. We intended that institutions wishing to transform a major design element in the direction of NDTYI recommendations could use the processes benchmarked in this report as means to set concrete goals for outcomes and identify specific activities needed to reach the goals. While only five sites for five different design elements of NDTYI were selected for benchmarking in this report, the general approach serves as an illustration of what could be done in any design element which an institution wished to transform.

We want to thank the following individuals who conducted the benchmarking studies with our direction. The studies reflect their special talents in investigating and reporting new designs for higher education. The individuals are (in order of the chapters in the report)

- Reid Haglin (with the assistance of his wife, Lynn)—Learning Process
- G. David Sayre—Learning Partnerships
- Jan Doebbert—Learning Environment (emphasizing learning technology)
- Kathy Hefty—Learning Finance

These individuals have a common characteristic in that they are all participants in the doctoral studies component of the Leadership Academy for Two-Year Institutions of Higher Education at the University of Minnesota.

The other chapter on Learning Staff and Staff Development was conducted and written by me with the support of the National Center for Research in Vocational Education site at the University of Wisconsin–Madison as part of the project entitled, "Teacher Learning in the Workplace and Community." Special thanks go to L. Allen Phelps, University of Wisconsin NCRVE Site Director, for his encouragement and financial support to do this part of the study. The chapter on Learning Staff and Staff Development will also be published as a case study series by the Teacher Learning in the Workplace and Community project.

Most importantly, we want to give special thanks to the individuals and institutions who opened their doors to our study request and took time to graciously host site visits and respond to our questions. These individuals are noted in each of the chapters, and there were several at each site. The following are the study sites and the key individuals at each site:

- Learning Process: San Diego Community College in California; Barbara McDonald, Director of CWELL Action Research Center
- Learning Partnerships: Fox Valley Technical College in Wisconsin; Martin Gentz, Vice President for Instructional Services
- Learning Staff and Staff Development: Miami-Dade Community College in Florida; Marie Nock, Director of College Training and Development
- Learning Environment (Technology): Higher Education and Advanced Technology (HEAT) Center at Lowry in Colorado; Don Goodwin, Executive Director, and Mary Ann Roe, Planning, Development & Special Projects
- Learning Finance: Sauk Valley Community College in Illinois; Jani Bradley, Vice President of Administrative Services

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- Lauren Jacobs who served as outside reviewer for NCRVE
- Michelle Englund who provided overall editing assistance

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Thank you for your thoughtful and careful attention to the content and format of the report.

We hope individuals and institutions interested in New Designs for Two-Year Institutions of Higher Education find this report stimulating and encouraging as they address the needed transformations in our institutions of higher education.

George H. Copa
November, 11, 1997
St. Paul, Minnesota

EXECUTIVE SUMMARY

This report is a companion piece to *New Designs for the Two-Year Institution of Higher Education* (NDTYI) (Copa & Ammentorp, in press). The benchmark studies included in this report focus on learning sites that meet the design specifications for 21st century two-year institutions of higher education as described in NDTYI. The studies are meant to be illustrative rather than definitive in showing how two-year institutions are meeting student and community needs in new, cost-effective ways. The studies also illustrate the use of benchmarking as an organizational transition process—a means toward envisioning more concretely what is desired and the way it can be realized. The purpose of this report is to scan for sites exemplifying new designs in a more comprehensive and systematic way and describe selected sites in a more thorough manner than in the NDTYI final report.

In this study, benchmarking activities focus on particular design elements of two-year institutions. That is, we set out to discover benchmark processes related to each of the steps in the design process advocated in NDTYI. These processes were selected using the design specifications associated with the design element in question. In this way, the resulting benchmark studies preserve the integrity of NDTYI, and their discoveries can be readily implemented in a comprehensive process of organizational change.

The first chapter of this report provides an introduction to the project, "New Designs for the Two-Year Institution of Higher Education." Sections of the chapter address the purpose of the project, its focus in terms of institutions and motivations, and the research and development process used to achieve its purpose.

Chapters Two through Six present five benchmark studies that illustrate design specifications for various design elements of NDTYI. They deal, respectively, with the design elements of learning process, learning partnerships, learning staff and staff development, learning technology, and learning finance. Each study is organized to discuss the following:

- The *rationale* for selecting the benchmarked process in terms of the design specifications associated with the design element in question.

- The *objectives* underlying the benchmarked process and how they are defined and communicated in practice.
- The *key features* which make the benchmarked process unique and how these are related to the design specifications.
- The *impact* realized by the benchmarked process.
- The *future directions* planned for the benchmarked process.
- The *design implications* or lessons learned that we see in the benchmarked process.
- The *contacts* for further information about the benchmarked process. The contacts include the author of the benchmark study report and contacts at the site of the benchmarked process.

Chapter Two presents a benchmark study for the design element of learning process. The Consortium for Workforce Education and Lifelong Learning (CWELL) at San Diego Community College was selected for benchmarking because its conceptual approach is unique, and the project incorporates many of the new design specifications for learning process. CWELL is an innovative project to improve adult education in local contexts and is a collaborative partnership between the San Diego Community College District – Continuing Education Division; San Diego State University – Department of Educational Technology; and the Applied Behavioral and Cognitive Science, Inc. These organizations are working together to meet the needs of new immigrants and undereducated youth and adults for noncollege credit education and training.

Chapter Three presents a benchmark study for the design element of learning partnerships. Fox Valley Technical College (FVTC) was selected for study in relation to learning partnerships. FVTC has two campuses and five regional centers which serve a five-county geographic region in Northeast Wisconsin. FVTC is part of the fabric of the community it serves. The college has formed partnerships with employers, agencies, and other educational institutions (both public and private) within the community, the state, and nationally.

Chapter Four presents a benchmark study for the design element of learning staff and staff development. The Miami-Dade Community College (M-DCC) site was selected for study in relation to staff development. This chapter focuses on the special attention given to staff development at M-DCC beginning in 1986 with the initiation of the Teaching/Learning Project. From the start of the project, the central commitment was to improve learning for all students and the focus, while starting with faculty, soon moved to include all staff.

Chapter Five presents a benchmark study for the design element of learning environment, focusing specifically on technology. To facilitate breakthrough modeling and application of NDTYI relating to the element of learning environment, the Higher Education and Advanced Technology (HEAT) Center at Lowry: A Colorado Community College and Occupational Education System Innovation, was chosen as a benchmark site because of its exemplary practices in the area of technology in the learning environment. The HEAT Center at Lowry is a developing education center housed on the site of the former Lowry Air Force Base. While in a continuing process of renovation and expansion, the HEAT Center at Lowry now is the site for delivery of programs offered by six participating community colleges. The HEAT Center at Lowry also provides training and assistance through private sector alliances and affiliated baccalaureate and graduate colleges and universities.

Chapter Six presents a benchmark study for the design element of learning finance. The design specifications for learning finance proposed in NDTYI served as the basis for selecting Sauk Valley Community College (SVCC) located in Dixon, Illinois, as the site for this study. The effective design of SVCC's financial structure is evident not only in its strong financial ratios, but also in the college's physical environment. SVCC also has an effective program review process which ensures that resources are allocated in areas that add the most value to the college.

The final chapter of this report presents a summary and implications of the benchmarked studies. The design process described in NDTYI provides a helpful framework for assessing the utility and value of the benchmarked processes. Each of the design specifications can be viewed as a standard against which the potential contributions of a benchmark can be evaluated. By reviewing these specifications for each design

element, the two-year institution can make informed decisions concerning organizational change and innovation.

Benchmarking is only the starting point for organizational change. It opens the door to considering something other than "business as usual" by showing the two-year institution how other institutions serve their stakeholders in unique ways. Benchmarking provides a baseline and pathway for authentic change in that it defines processes that "work." They are not exercises in "what might be"; they are real activities that deliver outcomes demanded by students and the larger community.

CHAPTER ONE: INTRODUCTION

The benchmark studies included in this report are offered as exemplars of the processes meeting the design specifications for 21st century two-year institutions of higher education (TYIs) as described in *New Designs for the Two-Year Institution of Higher Education* (Copa & Ammentorp, in press). They are meant to be illustrative rather than definitive in showing how TYIs are meeting student and community needs in new, cost-effective ways. The studies also illustrate the use of benchmarking (Boxwell, 1994; Camp, 1995) as an organizational transition process—a means toward envisioning more concretely what is desired and the way it can be realized.

New Designs Process

This section provides an introduction to the project, New Designs for the Two-Year Institution of Higher Education (NDTYI), conducted during calendar years 1995 and 1996. Sections of the chapter will address the purpose of the project, its focus in terms of institutions and motivations, and the research and development process used to achieve its purpose.

Project Purpose

NDTYI had three purposes. First was to develop a design process that was sufficiently powerful to overcome traditional approaches and responses to designing TYIs. The second purpose was to develop a set of design specifications for an effective 21st century TYI. The resulting design specifications were to serve as the criteria for new TYI models—a way to stretch thinking and stimulate responsible critique of current practice. The third purpose was to develop and/or identify and describe new designs for TYIs that met the proposed design specifications referred to above. The new designs were to make the design specifications very real and concrete for use in dissemination, training, and implementation. The final report (Copa & Ammentorp, in press) for NDTYI addressed these three purposes. The first two purposes are addressed at length in the NDTYI final report; however, the scanning for new designs was abbreviated and the descriptions very brief. The purpose of this report, therefore, is to scan for sites exemplifying new designs in

a more comprehensive and systematic way and describe selected sites in a more thorough manner than in the NDTYI final report.

Project Focus

The work of the project was focused in two different ways—(1) by type of institution and (2) by motivation for considering new designs. First, the project focused only on TYIs and not four-year colleges and universities. TYIs include technical institutes and colleges, community colleges, and private proprietary schools. TYIs offer a wide variety of programs culminating in certificates, diplomas, and associate degrees. Comparable European educational institutions are colleges of adult and further education, the latter years in higher-level vocational schools, and the earlier years in polytechnic institutions.

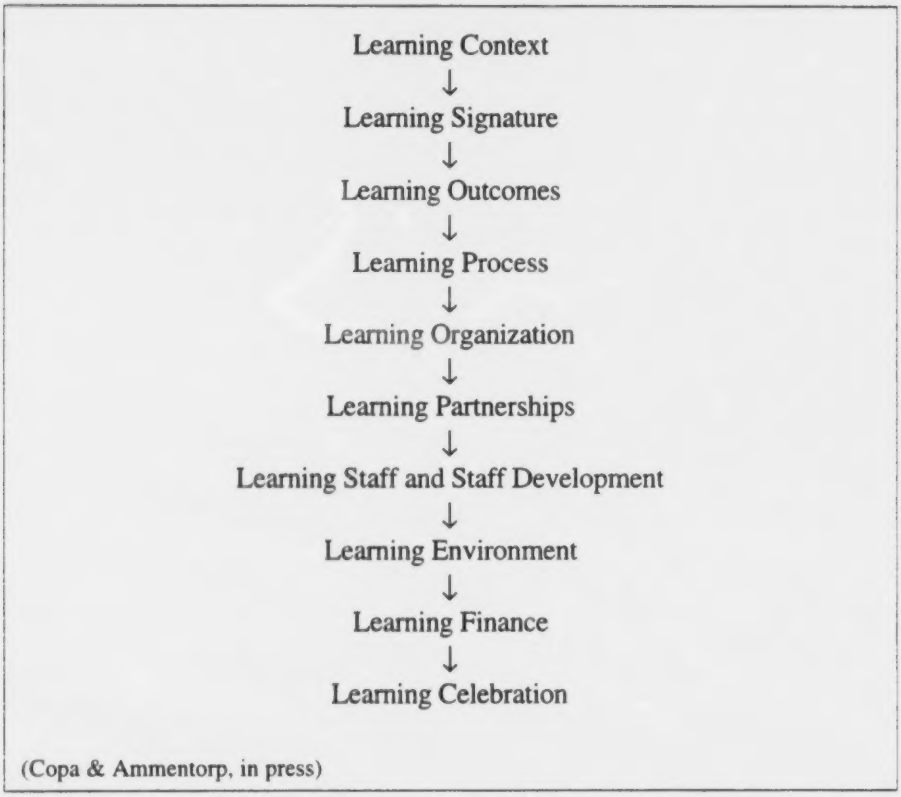
The project also focused on a particular target audience in terms of motivations for considering major changes in the above-mentioned institutions. Three specific groups were of interest: (1) administrative leaders responsible for designing entirely new institutions; (2) administrative leadership responsible for major restructuring (i.e., merger, reengineering, downsizing) of institutions; and (3) policymakers at the local, state, and federal levels responsible for policy, regulations, and funding for TYIs.

Project Process

This section of the report will briefly describe the design process used in developing specifications for a future-oriented TYI. Detailed information on each of the design elements and design specifications for each element is provided in the NDTYI final report. Each of these components of the process is a product of the project in the sense of providing a strategy or "roadmap" for design in a particular institutional setting.

The design process was made up of ten design elements, executed in a particular order referred to as "designing-down." The design process is shown in Figure 1. The design elements were addressed in this particular order so as to get careful alignment among the design elements and to get "first questions first." The idea is to ensure that the design fits the needs of the situation and proceeds in a logical order from aims to actions to supporting structure, culture, and environment. Each of the design elements will now be described.

Figure 1
New Designs Process



(Copa & Ammentorp, in press)

Learning Context

Each design for a TYI must meet the needs of a particular context or situation. The context is described in terms of assets to be kept a part of the new institution, problems with current institutional operation, opportunities to be taken advantage of with a new institution, and aspirations to be sought after in the new institution. Studying and analyzing the learning context results in a set of design criteria used to guide and monitor the accomplishments of the other design elements.

Learning Signature

Learning enterprise designs are given direction and energy by the symbols and metaphors representing the hopes and expectations of policymakers, educators, and their students. An effective design process must first try to elicit and understand these hopes and

expectations as a way to give coherence and focus to learning design. Often the signature takes form through symbols and metaphors (e.g., words, pictures, people, stories, objects) representing a deeply shared perspective on the learning enterprise.

Learning Outcomes

Globalization and its associated complexity demand that TYIs have a clear idea of the value to be added by the learning enterprise as a starting point for program improvement. In short, TYI leaders must clearly know the competencies, standards, or results they want to produce for and through the learners. At the same time, students must be able to see what TYIs can do for them in terms of their personal development.

Learning Process

Learning outcomes are accomplished through the design of an appropriate learning process, traditionally viewed in terms of the language of curriculum, instruction, and assessment. Too often in higher education, the attention is to teaching in contrast to learning and to subject matter (curriculum) at the expense of instruction and assessment. Most faculty in higher education are not required to study the learning process—instead, they center almost solely on subject matter. If TYIs are to address the learning design challenges and opportunities of the future, they must have a working language and knowledge of the learning process with foundations in human development.

Learning Organization

For the learning process to be successful in reaching the learning outcomes in a manner called for by the learning signature, a learning infrastructure or organization must be put into place and continually improved. The learning infrastructure is made up of the organization of learners, learning time, learning settings, subject matter, staff, technology, and learning environment. It is here that new designs for TYIs are most clearly visible. Familiar physical and organizational forms of higher education are unlikely to be responsive to the needs of students and the changing nature of society and its lifeplaces (e.g., work, family, community).

Learning Partnerships

The link between higher-education institutions and their communities takes the form of learning partnerships among public and private sector organizations. TYIs can no longer

"go it alone"—they have neither the resources nor the knowledge to be set apart from their surroundings. Instead of the "ivory tower" of the past, higher-education institutions of the future will be ever more closely integrated with their communities and will bear increasing responsibilities for the quality of life of those who support and benefit from its work.

Learning Staff and Staff Development

The changed perspective suggested above mandates parallel development of teachers, administrators, and support personnel ready to adapt TYIs to new realities. Higher education will need to identify, train, and support leaders who can shape curricula and student experience in forms indicated by ever-changing learning expectations and processes.

Learning Environment

The driving force for higher education has shifted from the traditional—static—subject matters to a dynamic view of knowledge and its use. Information technology has been and will continue to be a pivotal force in this development; it has redefined the process of knowledge creation, transmission, and application. Learning technology has become one of the major considerations in any new design for the learning environment for TYIs. After consideration of the design elements noted above, consideration should shift to the physical and social environment of the institution. New designs will not be constrained by architectural forms, nor will they be limited to traditional educational practices; they will be motivated by the dynamic integration of higher-education institutions with their students and communities. Learning environments will include consideration of settings such as home, workplace, community, and school.

Learning Finance

This element of the NDTYI process concerns both the cost and revenues for higher education. Key strategies concerning cost include cost containment, improved efficiency, re-engineering, and alternative sources of services. On the revenue side, strategies include institutional development, new products and services, partnerships, and new markets.

Learning Celebration

The NDTYI process is integrated by the cultural symbols and practices of all those associated with the TYI. Learning experiences and their applications are continually reinforced through celebrations whereby the community confirms the relevance of the work of higher education.

While the design elements are presented in linear, downward order, the process also involves moving upward and among the design elements to ensure close alignment and internal consistency and coherence. Close alignment of the design elements is needed to realize quality and efficiency in the operation of the TYI. (See NDTYI final report for further information on each of the design elements and design specifications developed for each element.)

Benchmarking Process

Benchmarking plays a central role in NDTYI. It recognizes that many design elements exist in other institutions and it is not always necessary to "reinvent the wheel" in order to make productive changes in TYIs. Benchmarking is "the process of identifying, understanding, and adapting outstanding practices and processes from organizations anywhere in the world to help your organization improve its performance" (American Productivity & Quality Center, 1997, p. 1). The key words in this definition are "identifying," "understanding," and "adapting"; they set in motion a process to search for excellent practices and processes, study them in detail, and adapt those best suited to the TYI of concern.

The driving force motivating benchmarking is a quest for quality and feasibility in new designs. New ideas and practices do not guarantee the success of a new design. Instead, the worth of any new design is measured by the increment of quality it adds to the work of the TYI (Lewis & Smith, 1994). In this sense, benchmarking is a key component of the strategic thinking that motivates the NDTYI process (Copa & Ammentorp, in press; Watson, 1993). Put another way, benchmarking gives tangible form and proven ways to implement design concepts and helps to link new designs to the day-to-day activities of students and staff in TYIs.

Benchmarking has another, more immediate effect. It can point to specific activities and processes which can be implemented to materially reduce cost and increase quality. Benchmarking studies have been used to bring these benefits to all aspects of organizational activity in higher education (Coate, 1990). As benchmarking becomes a familiar activity, it can help all members of the TYI community reflect on what they do and how their work can contribute to increases in all aspects of organizational quality (Seymour, 1992).

In the NDTYI, benchmarking activities focus on particular design elements. That is, we set out to discover benchmark processes related to each of the steps in the design process advocated in NDTYI. These processes were selected using the design specifications associated with the design element in question. In this way, the resulting benchmark studies preserve the integrity of NDTYI and their discoveries can be readily implemented in a comprehensive process of organizational change.

Information regarding each benchmarked site was gathered from a number of sources. These sources included interviews with key informants, observations on-site, and materials gathered during site visits (e.g., brochures, articles, and reports).

Summary

In the pages that follow, five benchmark studies are presented in detail. They deal, respectively, with the design elements of Learning Process, Learning Partnerships, Learning Staff and Staff Development, Learning Technology, and Learning Finance. Each study is organized to discuss the following:

- The *rationale* for selecting the benchmarked process in terms of the design specifications associated with the design element in question.
- The *objectives* underlying the benchmarked process and how they are defined and communicated in practice.
- The *key features* which make the benchmarked process unique and how these are related to the design specifications.
- The *impact* realized by the benchmarked process.

- The *future directions* planned for the benchmarked process.
- The *design implications* or lessons learned that we see in the benchmarked process.
- The *contacts* for further information about the benchmarked process. The contacts include the author of the benchmark study report and contacts at the site of the benchmarked process.

CHAPTER TWO:
BENCHMARKING LEARNING PROCESS*

The learning process is at the center of any new design for TYIs. In this design element, the learner and her or his experience shape the design process. The learning process is, at the same time, the design element most easily controlled by the TYI. Faculty and staff have a wide range of options available to formulate new designs for learning along with the professional authority to implement their ideas. As a result, benchmark studies of the learning process are especially helpful to those TYIs interested in making immediate and significant changes in their organizations.

Site Selection

The design specifications described in NDTYI served as the basis for selecting the benchmark site relating to learning process. These specifications are shown in Exhibit 1.

The Consortium for Workforce Education and Lifelong Learning (CWELL) at San Diego Community College was selected for benchmarking because its conceptual approach is unique, and the project incorporates many of the new design specifications for learning process:

- *Results in Learning Products which Improve the Community*: Research conducted by students at CWELL is focused on improving the practice of youth and adult education, including developing more effective service delivery, improving critical thinking skills, and literacy.

---

* This chapter was written by Reid and Lynn Haglin who live in Superior, Wisconsin. Reid Haglin was Campus Administrator at Wisconsin Indianhead Technical College–Superior Campus. He recently took a position as University of Minnesota Extension Service Leader and St. Louis County Director, Duluth, Minnesota. He is also a doctoral student in the Leadership Academy for Two-Year Institutions of Higher Education at the University of Minnesota and this research is part of his doctoral study project. Lynn Haglin is Director of the KIDSPLUS program at Northland Foundation, Duluth, Minnesota.

Exhibit 1
Design Specifications for the Learning Process

- *Aligns with the Learning Context, Signature, and Outcomes:* Learning process pays close attention to the design specifications for previous design elements.
- *Results in Learning Products which Improve the Community:* Learning process produces products which are valued by the community external to the institution.
- *Links to Internal and External Standards:* Learning process is responsive to the expectations of staff and the wider community (e.g., needed to continue learning at other educational institutions, occupational skill standards).
- *Applies Continuous Assessment To Improve Learning:* Learning process uses frequent and immediate assessment and feedback to improve the learning experience.
- *Personalizes to the Needs and Prior Experiences of Each and Every Learner:* Learning process is tailored to the unique situation and experiences of each learner with the learner at center of the planning process.
- *Provides Multiple Pathways To Reach Learning Outcomes:* Learning process provides several ways to learn the same thing.
- *Builds the Self-Esteem of Each Learner:* Learning process is a positive and energy producing experience for learners.
- *Is Managed by Learners in Consultation with Learning Staff:* Learning process is managed by the learners with guidance by staff.
- *Employs Collaborative Learning in Problem Solving:* Learning process involves working as a small group or team to solve problems.
- *Creates Strong Sense of Learning Community:* Learning process builds a close and caring relationship among learners.
- *Engages the Learner in Inquiry (Research) and Knowledge Construction:* Learning process involves students in the research and development process and forming meaningful knowledge.
- *Links to Global Information Network:* Learning process is tied to and uses electronic information networks (e.g., Internet).
- *Guides by Experienced Navigators:* Learning process is shaped by knowledgeable staff who are very familiar with using information networks.
- *Uses Learning Projects Connected to the Needs of the Community:* Learning process uses real projects drawn from the needs of the community as a context and content for learning.

- *Employs Collaborative Learning in Problem Solving*: Students collaborate on research projects with other students, teachers, and educational researchers. These

research projects focus on learning, knowledge construction, and cognitive processes.

- *Creates a Strong Sense of a Learning Community*: Researchers, educators, and graduate students, as well as CWELL students, are involved in continual research and education at CWELL. The learning community works together on research issues that affect the education of students at CWELL.

- *Engages the Learner in Inquiry (Research) and Knowledge Construction*: CWELL has a "student-as-researcher" program where adult students conduct and report original research in the field of education.

The information provided in this report is based on the following: a two-day site visit to San Diego Community College, August 11-12, 1997; person to person interviews with William Armstrong, Director of Office of Research and Planning, San Diego Community College District; Augustine Gallego, Chancellor, San Diego Community College District; Barbara McDonald, Director of CWELL Action Research Center, Mid-City Center; and Thomas Sticht, Coordinator for Applied Behavioral and Cognitive Science, Inc.; and a review of the San Diego CWELL Project's related materials.

Site Background

The San Diego CWELL Project was developed from findings and recommendations of the California Workforce Literacy Task Force, the Secretary's Commission on Achieving Necessary Skills (SCANS), and research on the functional context education learning process provided by Sticht, Armstrong, Hickey, and Caylor (1987), in their study, *Cast-off Youth: Policy and Training Methods from the Military Experience*.

The California State Legislature created the California Workforce Literacy Task Force in 1989. After a yearlong study of the educational system for out-of-school youth and undereducated adults in California, the Task Force noted that there were many different educational organizations offering basic skills, vocational, and work-related education in the State of California. Over 800 million tax dollars were being spent on these educational endeavors, but there was no system of accountability in place, no set standards, and little evaluation information available. The minimal information that was available indicated that

students stayed in a program of study for an average length of 80 to 120 hours and made little, if any, improvements in learning as measured by California's Comprehensive Adult Student Assessment System.

Another finding of the Task Force was that although many of the youth and adults being served tended to be those commonly referred to as "at risk," defined as "among the most difficult to educate and train," the majority of administrators and teachers serving this population were not professionally trained for this work. They determined that over 1,000 organizations were providing adult literacy instruction, but most of the teaching was being conducted by volunteers. They also noted that there were no programs in California's university system where teachers could be educated and trained in the best methods of instructing and serving the needs of California's undereducated youth and adults.

According to *The San Diego CWELL Project Report of Progress* (Sticht, 1994), the major findings of the Task Force found no programs anywhere in California, or the rest of the nation, to prepare professional educators who could do the following:

- Work with "at-risk" youth and adults to develop school-to-work programs that integrate the teaching of vocational and academic skills into "workforce education" for workplaces.
- Develop new technical training so that out-of-school, undereducated youth and adults can save time and efficiently learn employability and technical skills for jobs while mastering powerful cognitive skills.
- Develop family education programs that serve both children and adults at ages across the lifespan, therefore truly engaging educators in "lifelong learning" and the intergenerational transfer of values and skills.
- Serve populations in settings as diverse as the State correctional facilities; city jails; Job Corps camps; adult basic and secondary education; and multinational, high technology industries.

Based on these and other findings, the California Workforce Literacy Task Force (Sticht, 1995) recommended the following:

> That the Legislature establish a network of field stations for action research and evaluation on adult education in association with campuses of the California State University and Community College system, oriented to developing information about California's workforce skills needs, abilities of the non-college bound workforce, and the development of improved methods of education and training for non-college bound youth and adults; further that the Legislature require the California State University and Community College systems to establish a formal program to educate and train a cadre of adult educators that can work with the spectrum of education, language, and learning needs of California's undereducated youth and adults. (p. 3)

Although the California Legislature recognized and acknowledged the findings of the Task Force, they did not allocate funds to support the implementation of its recommendations.

The California Workforce Literacy Task Force was formed and began studying the system of education for out-of-school youth and undereducated adults in California just prior to the formation in early 1990 of the Secretary of Labor Elizabeth Dole's Commission on Achieving Necessary Skills (SCANS). The mission for SCANS was to "define the necessary functional and enabling skills which society must provide to every child by the age of sixteen." Thomas Sticht, president and senior scientist of Applied Behavioral and Cognitive Sciences, Inc., a nonprofit organization that conducts research and development leading to improved methods of education and training for undereducated youth and adults, was asked to serve as one of the SCANS commissioners. At SCANS' first meeting, Sticht made a presentation on functional context education and its application to preparing youth and adults with the basic skills needed for work. After conducting studies of the cognitive science research literature related to the importance of learning in context, SCANS staff held a meeting with a number of cognitive scientists to determine the usefulness of the functional context education concepts. Based on that research, the mission statement for SCANS was drafted and stated "We believe that these skills are best learned in context and especially in the context of realistic workplace problems. Thus, the teaching of functional skills will require the most radical change in educational content since the beginning of this century."

According to Sticht (1997b), "functional context education is an approach to education that is based upon a cognitive science theory of cognitive development, learning, and instruction" (p. 1). Sticht identifies literacy as a key component of functional context education because of the important role it plays in all schooling and instruction. He believes the general thesis that literacy is something one must "get" in one program, which is then

"applied" in another, is misleading. The argument of functional context education is that literacy is developed while it is being applied. His research has shown that students do not need to reach a "prerequisite" level of literacy before they work on content skills. This is contrary to the more common belief that literacy must be a separate program, which is then applied in another course of study. Sticht (personal communication, August 11, 1997) has conducted intensive research and his careful documentation supports the idea that for the large numbers of youth and adults who read between the 5th- and 9th-grade levels, literacy and content skills education can be integrated. With this theory, there is no need for special "remedial" literacy programs to get students to "prerequisite" levels of literacy before they are permitted to study the "real thing."

Sticht not only served on SCANS, but also served as chair of the California Workforce Literacy Task Force. Functional context education and Sticht's research findings from extensive studies of military training programs became the basis for the SCANS recommendations, as well as for the recommendations from the California Workforce Literacy Task Force.

CWELL was developed and has been implemented over a six-year period. Officials from the William and Flora Hewlett Foundation reviewed the California Workforce Literacy Task Force's report in 1991. Upon completion of their review, a grant was provided to the Applied Behavioral and Cognitive Sciences, Inc., and President Thomas Sticht, to prepare a report showing how the Task Force's recommendations could be implemented. CWELL was established through a second, two-year grant from the Hewlett Foundation in 1992. The Lila Wallace Reader's Digest Fund provided an additional three years of funding to CWELL with a focus on research and development to better understand how English as a second language (ESL) instruction could be integrated with instruction in vocational education.

According to the CWELL Report of Progress (Sticht, 1995),

> The CWELL provides a working model of how the California State University and California Community College systems can work together to meet the recommendations of the California Workforce Literacy Task Force for professional development and action research to improve the education and training of California's out-of-school, undereducated youth and adults. The CWELL is an innovative project to understand and improve adult education in a local context. (p. 5)

According to Armstrong (personal communication, August 12, 1997), a member of the Consortium, "The CWELL was created as a qualitative project to influence the way people learn and teach, not as a quantitative study to measure or produce data."

Process Objectives

CWELL is an innovative project to improve adult education in local contexts. CWELL is a collaborative partnership between the San Diego Community College District Continuing Education Division (SDCCD/CE), San Diego State University – Department of Educational Technology (SDSU), and the Applied Behavioral and Cognitive Sciences, Inc. These organizations are working together to meet the needs of new immigrants and undereducated youth and adults for noncollege credit education and training.

Each of the partners contributes to the San Diego CWELL Project in a number of ways. These contributions are presented below.

The San Diego Community College District Continuing Education Division

The SDCCD/CE provides the state adult programs, including high school completion, ESL, classes for older adults, job training/vocational classes, business classes, classes for the disabled, parenting, child development, and consumer and home economics classes. Adult education, continuing education, night school, and community services are all part of SDCC/CE's commitment to learning for a lifetime.

In order to implement the California Workforce Literacy Task Force's recommendation to establish "field stations for action research," SDCCD/CE has developed a field station called the CWELL Action Research Center (ARC). The mission of ARC is "to research new methods for meeting the needs of youth and adults for workforce education and lifelong learning." As part of their commitment to making this part of the CWELL work, SDCCD/CE provides facilities for the ARC, and part-time staff, including an ARC coordinator, Barbara McDonald, research staff, and teachers who receive stipends for conducting original research to improve instructional services. The CWELL ARC office is located in the heart of San Diego's inner city at the Mid City Continuing Education Center. There are four additional SDCCD/CE centers that serve the ARC community.

The ARC community includes 212,800 people out of the total population of approximately 2.5 million in the greater San Diego area. The ARC community is comprised of students who attend classes at one of four sites. These include the Centre City Skills Center, the Caesar Chavez Center, the Educational Cultural Complex, and the Mid-City Center. The student population is ethnically diverse with a large population of minorities, many of whom are refugees. Overall, the ARC community is socially, educationally, and economically depressed compared to the greater San Diego area.

San Diego State University – Department of Educational Technology

The College of Education, Department of Educational Technology, San Diego State University (SDSU) has developed the Workforce Education and Lifelong Learning Specialist (WELLS) program as part of the Master of Arts in Education graduate degree. The program is designed to implement the California Workforce Literacy Task Force's recommendation for professional education for educators of out-of-school youth and adults.

Applied Behavioral and Cognitive Sciences, Inc.

Thomas Sticht, cognitive psychologist, serves as the San Diego CWELL Project Coordinator. He provides advisory and technical services to both the San Diego State University and the San Diego Community College District. His role in the project is to assist with the development of the WELLS degree program—the new Master of Arts Specialization in Workforce Education and Lifelong Learning. He also teaches the introductory course in the program. For the SDCCD/CE, Sticht provides technical advisory services to and works part-time with the ARC director and staff to help design, conduct, and report studies on workforce education and lifelong learning such as *Family Workplace Literacy Programs: A Note on the Intergenerational Transfer of Literacy from Fathers to Children* and *Functional Context Education and Adult Literacy: Historical Perspectives for Workforce Development*. He also tracks research findings from research and development centers throughout the United States, as well as internationally, and shares these findings within the ARCs and the WELLS graduate program.

Key Features

ARC and WELLS have key features that establish the San Diego CWELL Project as an exemplary site in regards to the learning process.

ARC has the following features:

- Resident and external research scientists with internationally recognized expertise in cognitive science, educational psychology, testing, assessment, evaluation, adult literacy, technical training, and the application of these disciplines to the educational needs of youth and adults.

- Teacher-as-researcher program in which teachers and administrators participate in the conducting and reporting of original grassroots research to improve the practice of adult education in the ARC community.

- Adult student-as-researcher program in which adult students participate in the conducting and reporting of original research projects to better understand the need for, barriers to, and methods for adult education from the adult learner's perspective. According to the CWELL 1992-1994 Report of Progress (Sticht, 1994), the student research/writing project serves the following purposes: it provides a forum for adult students to voice their opinions and thoughts about the educational service delivery system in which they study, as well as how education has affected them as students, adults, parents, and citizens; it provides an opportunity for administrators, staff, researchers, and teachers to gain insight into what their clients are thinking about the current system and how more effective methods of service delivery may be incorporated; and it provides an opportunity for students to conduct educational research as a method of empowerment, information-seeking, and improvement of critical thinking, analytical, and writing skills. Student research and writing contests are the principle stimulus for encouraging participation of adult students as researchers.

- Graduate students from the San Diego State University who are enrolled in the new WELLS program participate in the activities of the ARC.

- A research dissemination program is available that includes the publication and distribution of the *Community Exchange* newspaper three times each year,

conducting four Saturday seminars a year, and an annual conference on important issues facing adult education.

- Research and development conducted within a coherent conceptual framework office that includes the social basis of cognition; the human cognitive system; a developmental model of literacy; a constructive, information processing approach to teaching and learning; and the intergenerational transfer of cognitive abilities and educational attitudes from parents to children.

- Research and development of scientists, teachers, adult students, and graduate students working in the ARC orchestrated by the conceptual framework to improve the participation of adults in education, achievement in and outside the classroom, and the prevention of future learning and schooling problems of children.

WELLS has the following features:

- A concentration in Educational Arts and Technology so that adult educators will possess mastery of education theories, instructional design, interactive computer, and telecommunications technologies for the design and delivery of adult education. The WELLS program was established in response to the expanding role that technology is and will be playing in providing education to out-of-school youth and adults. Technology is a key to reaching populations in diverse settings and at critical times when lives are in transition and access to education and training is sought. WELLS students will be knowledgeable and skilled in using a variety of technologies for education, including traditional classrooms, lectures, and texts, but also computer-based interactive media and television for distance learning. WELLS develops competence in working in teams made up of various content specialists to analyze learning objectives; to design, develop, and deliver education and training; and to evaluate learning outcomes and program effectiveness.

- A command of cognitive science applied to the learning, education, and training needs of youth and adults who are undereducated or in other ways in need of special instructional methods and contents.

- An understanding of culture and human resource policies and practices, including special emphasis on educational policy and practice implications of cultural diversity

in the adult population of the United States and the diversity of settings in which adult education takes place.

- Participation by WELLS graduate students in work experience internships in business and industry in a variety of settings to enhance the performance of personnel through the diagnosis of performance problems; the development of job aids; or the design, delivery, and evaluation of instructional programs for adults.

- Development and maintenance by WELLS faculty and students of an electronic network for communicating with ARC and other research and development centers and labs around the world.

Impact

CWELL has served as a vehicle for the development of a partnership and collaboration between two major educational institutions, San Diego State University and the San Diego Community College District. CWELL has helped break down the barriers between these institutions, resulting in new opportunities and relationships for students, staff, and administration and establishing a new way of doing business.

The San Diego CWELL Project has created ways to produce new knowledge. The project has employed collaborative learning in problem solving and has engaged the learner in inquiry and knowledge construction. This has been accomplished through innovative research conducted by students, teachers, and cognitive scientists. This research has been documented through journals, the *Community Exchange* newspaper, seminars focused on teacher research, and annual conferences.

As a result of information gathered from ARC's students, teachers, and cognitive scientists, three books are in the planning stages (B. A. McDonald, personal communication, August 12, 1997). One book will focus on the potential of journal writing as an educational tool; more than 2,000 pieces of writing are presently being reviewed as part of this book. A second book will assess the teacher-research process; this book will highlight 24 research projects conducted by teachers. The research projects focus on student participation and achievement. Examples of these research projects include *Life History of ESL Students, Factors Affecting the Achievement of ESL Students*, and

Families Learning English Together. The third book will focus on the monolinguistic nature of the Caesar Chavez Center, where the majority of ESL students speak Spanish as their first language, compared to the multilinguistic nature of the Mid-City Center, where as many as nineteen different languages are present in the ESL classroom.

Through documentation of the San Diego CWELL Project, a new concept of learning process is illustrated. Teachers act as researchers and play a significant role in their own staff development as they learn about their students and design appropriate classroom activities and teaching methods. This is contrary to traditional staff development where teachers attend seminars and workshops conducted by outside experts.

An open entry/open exit policy for noncredit courses that allows students "to enter a class when there is a space available, learn what they want to learn, and leave when they want to leave," has been identified by cognitive scientists, administrators, and faculty of the CWELL as a challenge to the educational process. This is a learning process managed by learners with guidance by staff. Teachers have difficulty preparing their classroom activities and spend much time remediating because student participation in the classroom changes on a daily basis. Tracking students and their progress is challenging under these conditions. While the open entry/open exit policy has been implemented in education and training organizations across the nation, there has been little evaluation of the instructional consequences of this policy.

Future Directions

Due to lack of funds, the San Diego CWELL Project will end as a focused project in December 1997. This project has relied upon the generosity of private foundations, and the current funding cycle will end with the calendar year. According to Consortium members—Thomas Sticht, San Diego CWELL Project Coordinator; Augustine Gallego, Chancellor of the San Diego Community College District; Barbara McDonald, Director of the CWELL ARC; and William Armstrong, Director of Office of Research and Planning, San Diego Community College District—the San Diego CWELL Project has been successful.

The CWELL partners will sponsor a conference in spring 1998 that, according to Gallego (personal communication, August 11, 1997), will be a national discussion on lifelong learning. This will be an opportunity to focus on the role that community colleges, community college faculty and students, and the surrounding community play in creating a lifelong learning environment. The conference will look at ways to provide opportunities for each of the stakeholders and participants to create a collaborative learning process that will make classrooms action research centers. The intent of the conference is to assess the San Diego CWELL Project and to look at how it can be developed and taken to a larger scale in order to encourage every faculty member to be a researcher and every student an involved learner in the classroom. This event will also provide an opportunity to gather input from business and the community in order to determine what they need from adult education programs.

Design Implications

Based on the study of the learning process as represented in the San Diego CWELL Project, the following design implications appear warranted:

- *Learn in Teams:* Students, working in study groups with the guidance of teachers and community-based resource persons, can produce products and services valued by the larger community and strategic to improving higher education.

- *Engage in Action Research:* The learning experiences inherent in producing the products and services noted above provide very authentic opportunities to address the learning outcome recommended in NDTYI.

- *Use Functional Context:* The functional context of producing externally valued products and services enhances the involvement and engagement of learners and provides practice in knowledge construction, so much a part of the information/knowledge age.

- *Rely on Partnerships:* Partnerships with other institutions of higher education, government agencies and organizations, and the wider community can serve to enhance the supporting infrastructure for learning process and organization to reach high standards in learning outcomes.

- *Incorporate Technology:* Technology is very important to accessing, synthesizing, and communicating information as part of the learning process.

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CHAPTER THREE:
BENCHMARKING LEARNING PARTNERSHIPS*

Partnerships are a major determinant of vitality for the TYI. They provide access to new ideas and practices needed to keep the TYI up-to-date. They also bring human and material resources to TYI programs. Partnerships can take many forms, ranging from cooperative courses to complex research and development agreements. They also involve many different individuals and organizations which serve to enrich the offerings of the TYI, leverage the TYI's resources, and provide synergies to all of the partners.

Site Selection

The design specifications described in NDTYI served as the basis for selecting the benchmark site relating to learning partnership. The design specifications for learning partnerships are shown in Exhibit 2.

Fox Valley Technical College (FVTC) was selected for study in relation to learning partnerships because it particularly focuses on the following NDTYI design specifications:

- *Enhances the Learning Experience:* Partnerships at Fox Valley Technical College add value to the learning experience in several ways such as increasing available resources and providing linkages to the community.

- *Provides Mutual Benefit:* Partners at FVTC are both benefactors and beneficiaries through the partnership activities. All of the partners have some of their needs met through involvement in the partnership.

- *Bridges Cultures:* Through partnerships at FVTC an understanding develops regarding the values, policies, and practice of all partners and ways they can work together effectively.

- *Leverages Resources/Results in Synergy:* Partnerships at FVTC result in additional resources/results for each partner. Although traditional funding mechanisms might

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permit the institution to continue business as usual, collaboration with outside partners increases both the quality and the quantity of educational services.

- *Impacts the Entire Community:* Partnerships at FVTC reflect the dynamics of community with its local, state, national, and international dimensions.

Exhibit 2
Design Specifications for Learning Partnerships

- *Aligns with Learning Context, Signature, Outcomes, Process, and Organization:* Partnership characteristics follow from and reinforce the design specifications for previous design elements.
- *Enhances the Learning Experience:* Partnerships add value to the learning experience, for example, by making it more authentic; providing opportunities to integrate subject matter areas; ensuring access to up-to-date technology; developing relationships with future coworkers; opening up new sources of knowledge; and leading to smoother transition from education to work, family, and community life.
- *Provides Mutual Benefit:* Partners are both benefactors and beneficiaries through the partnership activities. All of the partners have some of their needs met.
- *Includes all Stakeholders:* The portfolio of partnerships provides opportunities for all of the key stakeholders to be involved and benefit from learning experience. Assertive action ensures representation across age, gender, socioeconomic, geographic, and cultural background.
- *Bridges Cultures:* There is attention to developing an understanding of the values, policies, and practices of all partners and ways they can work together effectively.
- *Leverages Resources/Results in Synergy:* Partnerships result in additional resources/results for each partner or the same results for reduced resources—one plus one adds up to more than two.
- *Provides Many Ways of Contributing:* Partnership building is open and encourages multiple ways of adding value to the learning experience such as sharing risk, communicating standards, teaching and mentoring, providing support services (e.g., child care, transportation, subsidized income, or tutoring), giving equipment, and providing scholarships.
- *Builds Supporting Infrastructure:* Partnership-related strategies focus on sustaining alliances and the widespread responsibility to build new partnerships when and where they are needed. Developing a supportive infrastructure means opening up opportunities for good communications, establishing trust, involving all staff, providing ongoing training on partnerships, removing policies and practices that provide disincentives for partnerships, engaging in continuous quality improvement of partnerships, encouraging both formal and informal agreements, and ending partnerships graciously.
- *Impacts the Entire Community:* Partnerships reflect the dynamics of community with its local, state, national, and international dimensions. There is serious and strategic attention to stewardship of the community through partnerships.

The benchmarking study of FVTC included a site visit over a two-day period of July 21 and 22, 1997, and involved a comprehensive tour of all facilities on the Appleton, Wisconsin campus. The visit included a tour of businesses and industries that are located directly adjacent to the D. J. Bordini Conference Center. Personal interviews were conducted on the campus with key personnel which included the following persons: H. Victor Baldi, President; Martin Gentz, Vice President of Instructional Services; and Virgil Noordyk, Economic Development Manager.

Site Background

Fox Valley Technical College has two campuses and five regional centers which serve a five-county geographic region in northeast Wisconsin. According to the 1990 census, the region has a population of approximately 381,000 people and is home to approximately 10,500 businesses. Almost 90% of the businesses in the service area employ less than twenty workers and only eighty employers have more than 250 employees. In addition, there are 5,560 farms in the area. Thus, the service area is nonmetropolitan and is more rural in respect to the larger population centers in the state.

FVTC is one of sixteen postsecondary educational districts in the state of Wisconsin. Generally speaking, these individual regional education districts receive approximately one-half of their annual budget revenue from local government and less than 20% of their revenue from state aid. The balance of their revenue comes from student tuition/fees, institutional revenue, and miscellaneous revenue. FVTC generates approximately 15% of its operating revenue from the institutional revenue category, which largely consists of monies generated through contract revenue (i.e., customized training).

Considering the demographics of the area and the fact that in 1995-1996 FVTC customized training activities generated approximately 6 million dollars in revenue, it is clear that partnerships are central to the financial health of the college. According to FVTC's actual 1995-1996 budget figures, the program fees (student tuition) budget category brought in slightly less than 5 million dollars in revenue ($4,981,975) and approximately 8.1 million dollars in state aid. Thus, customized training is an extremely important source of revenue to FVTC.

FVTC is part of the fabric of the community it serves. The college has formed partnerships with employers, agencies, and other educational institutions (both public and private) within the community, the state, and nationally.

Process Objectives

FVTC (1997-1998a) is open and direct in its commitment to building and maintaining the community's workforce as expressed in the college's mission statement:

> The mission of Fox Valley Technical College is to help individuals reach their potential by providing cost-effective education and training for employment. We seek to build and maintain an effective and diverse work force that supports the economic growth and stability of our communities. (p. 4)

The mission statement indicates that the college focuses on the economic well-being of the local community as a key ingredient in its educational delivery plan. It further reinforces this commitment in the document "Strategic Directions Through 2001." All four of the strategic directions identified in this document are student focused; two of the four strategic directions recognize internal and external customers, market relevance, and the need to address unmet customer needs.

In addition, FVTC (1995-1996a) seeks to "develop and expand its information technology infrastructure to permit maximum linkages with its internal and external customers." Partnerships are considered a necessary component of the college.

Key Features

FVTC has built its partnership base by implementing a series of successful strategic plans focused on developing and maintaining partnerships. The FVTC Strategic Business Plan for Economic Development Contract Services (1995-1997) provides a five-year plan for contract services delivered by the college. The strategic plan includes a general description and specific details of contract services provided by the college. In addition, the college provides its partners with a guarantee of quality in the contracted services it provides. If agreed-upon client requirements are not met, services are redone at no charge to the client.

The key features of FVTC partnerships are as follows:

- Involving traditional day school faculty in the delivery of customized training. (Approximately 75% of the day school faculty teach customized training courses.)
- Recognizing that customized training can enhance the college's operating revenue (and then making it happen).
- Adhering to a master strategic plan focused on developing and maintaining partnerships.
- Utilizing strong citizen advisory committees, including listening to and implementing their ideas.
- Researching customers to find out what they need and want from the college.
- Specially designed buildings (D. J. Bordini Conference Center in Appleton, Wisconsin, and S. J. Spanbauer Center in Oshkosh, Wisconsin) on both campuses that target specific industry training needs. The college has three such centers to enhance educational delivery and communications capabilities.
- Perceiving students as customers.
- Committing to achievement of total customer satisfaction.
- Supporting administration that understands the importance and relevance of customer training.
- Generating win/win situations between partners. (FVTC, 1995-1997)

FVTC (1995-1997) has a long history of working together with a variety of businesses within its service area and prides itself on its relationship with business and industry. Thus, when the State of Wisconsin established a commission to make policy recommendations on the development of a quality workforce in the state, FVTC was off and running with its already well-developed, industry-customized training program.

Among the college's quality and productivity enhancement activities is its partnership with the Quality/Productivity Resource Center (Q/PRC), a nonprofit entity, that

is housed at the D. J. Bordini Conference Center on the Appleton, Wisconsin, campus. The Q/PRC controls and operates a specially designed media resource area in the D. J. Bordini Conference Center. This resource area houses a cutting edge collection of quality and productivity literature and other resources. The resource center is available to Q/PRC members and also to the staff and students of FVTC. The value and interest generated by the Q/PRC is borne out in a 1993 survey of Training Director/Operations Managers at 435 companies querying them on their awareness and interest in the technical assistance offerings of the college. The Q/PRC was the top-rated service (rated #1 by 39% of the respondents) according to the survey (FVTC, 1995-1997, p. 41).

The Wisconsin Center for Industrial Competitiveness – Northeast (WisCIC/NE) is a joint collaboration between FVTC, other area technical colleges, Milwaukee School of Engineering, Wisconsin Department of Development, and private consultants. This particular "consortium provides comprehensive assessment services and leadership to business and industry through a proactive network designed to enhance productivity, competitiveness, and profitability" (FVTC, 1995-1997, p. 9). The focus remains on the college's continuing ability to form partnerships and consortiums with a wide variety of companies, organizations, miscellaneous industries, and other educational institutions that have the common desire to improve their own organizations and help others while helping themselves.

FVTC's formal entrance in August of 1996 into the Wisconsin Manufacturing Extension Partnership (WMEP) is an expansion of its continued goal of providing services to a larger audience. Previous partnerships with a variety of agencies and industries had provided the college with a long list of capabilities (both expertise and high technology equipment) that could be directly attributed to the college's successful partnering efforts with business. WMEP is a collaborative public-private partnership with the expressed interest of promoting the competitiveness, strength, productivity, growth, and innovative capabilities of Wisconsin's small and medium-sized manufacturers. The affiliation with WMEP-Northeast continues to add both financial resources and additional educational expertise to an already formidable array of services (WMEP, 1996c).

The WMEP-Northeast consortium consists of the following membership:

- Lakeshore Technical College, Cleveland, Wisconsin

- Mid State Technical College, Wisconsin Rapids, Wisconsin
- Moraine Park Technical College, Fond du Lac, Wisconsin
- Northeast Wisconsin Technical College, Green Bay, Wisconsin
- University of Wisconsin, Madison, Wisconsin
- University of Wisconsin, Green Bay, Wisconsin
- University of Wisconsin, Stevens Point, Wisconsin
- University of Wisconsin Extension
- Milwaukee School of Engineering
- Wisconsin Department of Development (WMEP, 1996b)

In addition, the headquarters for the new consortium will be the D. J. Bordini Conference Center located on FVTC's Appleton, Wisconsin, campus. A number of services are available to small and medium-sized manufacturing firms through WMEP. These services include simple assessments and benchmarking of current operations, developing human resource programs, evaluating new technologies, and working with client firms to develop and carry out manufacturing strategies to improve efficiency.

WMEP is now part of a network of 60 National Institute of Standards and Technology affiliated manufacturing extension centers in the United States (WMEP, 1996c). The National Institute of Standards and Technology is connected with the U.S. Department of Commerce. Thus, this recent partnership extends the college's reach into 42 states and territories. In essence, this affiliation further enhances the college's ability to make available a greater array of services that are designed to be client-driven, and link small and medium-sized companies needing assistance with public and private sources of expertise. This effort is in keeping with the college's Board of Trustees policy related to "Governance Commitment," which lists as one of six core values, "Collaborative Partnerships."

FVTC (1995-1996a) has also developed a number of other successful partnerships, resulting in leveraged resources for the college and mutual benefit for all partners. These partnerships include the following:

- *Flexographic Press/Corrugated Printing Press Industry:* Major manufacturers of high tech, high speed printing presses have contributed several million dollars of state-of-the-art mass production printing press equipment to the college. This partnership is located in the D. J. Bordini Conference Center in Appleton, Wisconsin, and it is probably one of the most sophisticated two-year college training facilities in the nation.

- *Indentured Apprentice:* In the 1995-1996 school year, FVTC led the state in indentured apprenticeship enrollments (approximately 10% of the entire state's enrollment). This appears to be a direct result of the college's strong relationship with the state's unions.

- *Federal Grants:* FVTC has received four million dollars in federal grants from the U.S. Department of Justice. These grants include $1.2 million for "Youth Focused Community Policing" and $750,000 to provide "nation wide training to law enforcement and other professionals assigned to cases of missing and exploited children" (p. 8).

Impact

In FVTC's (1995-1996a) case, its financial statement and annual report confirm its success in delivering cost-effective training. In 1996, the Institute of Higher Education at the University of Florida named FVTC as a finalist in their Bellwether Awards Competition. The college was one of nine TYIs in the nation to be nominated in the "planning, governance, and finance" category. Mentioned specifically in regard to the award was a project/grant program that internally funded "full-time faculty's creative projects for enhancing the teaching/learning environment" (p. 9).

It becomes increasingly obvious that FVTC (1995-1996a) recognizes the entire teacher-student learning relationship and places value on technology innovation, the teacher, the facility, and the student. This is further developed by the Board of Trustees in

its policy related to "Governance Commitment." In this commitment, the Board points out the following core values: integrity, collaborative partnerships, innovation, continuous improvement, customer focus, and diversity. True partnerships must be designed in ways that all partners are winners as a result of the partnership.

Furthermore, the importance of partnerships and outside collaboration is very apparent in the college's overall enrollment (FVTC, 1995-1996a). According to enrollment figures released by the college, customized training/contracting has produced an average of almost 400 FTEs on an annual basis each of the last five years. In the 1995-1996 school year, FVTC produced more FTEs by contracting than any other technical college in Wisconsin and more than doubled the revenue generated ($6,004,251 to $2,782,882) by the next closest ranking technical college in Wisconsin.

Future Directions

It is anticipated by the college leadership that FVTC (1997-1998b) will continue to evolve its partnerships. In 1997-1998, the college plans on moving into a shared facility with Lakeland College, which, in turn, contributes to its expansion of partnerships within higher education. Continued participation and new added ventures in interactive television (ITV) is an expanding area for the college. For example, in 1997-1998, the college's commitment to K-12 School/College Alliance for Distance Education (KSCADE) fiber-optic leasing and ITV classroom will continue the sharing of ITV among high schools. It is apparent that the college will continue to find new business and industry partnerships, but will also supplement these high profile and usually immediate financial providers with other educational partners. FVTC is committed to the pursuit of quality, both on the inside and as an educational partner and provider to others.

Design Implications

Both public and private TYIs across the United States are faced with the dilemma of how to best serve their respective community's needs. Our fast changing economy dictates that the truly successful TYIs monitor their communities to identify new challenges, opportunities, and potential new partners. Business and industry has the ability to

contribute needed resources to TYIs. TYIs can contribute to meeting the needs of employers by providing education for a quality workforce. Collaborative relationships between TYIs and employers are important for the vitality of all partners and the community as a whole.

The following design implications appear warranted on the basis of the benchmarking study of learning partnerships at FVTC:

- *Increase Revenues:* Learning partnerships can provide a significant source of funds to increase and/or stabilize the budget of a two-year institution of higher education. Partnerships can produce a multiplier effect for local, state, and federal public funds.

- *Develop Community:* Learning partnerships can be used to focus economic and social development, create synergy among available assets, and reveal new opportunities for communities (and institutions).

- *Focus on Quality:* Lasting learning partnerships are built by providing high-quality, dependable educational services.

- *Respond to Needs:* Learning partnerships need to be client-driven, with constant checking for satisfaction and quick response to changing requirements.

- *Build Infrastructure:* Learning partnerships are based on good communications, clear expectations, and trusting relationships. All of these depend on having a supportive infrastructure with active informal information networks, decentralized authority, and flexible organization.

- *Involve All Staff:* As more and more staff are involved in successful partnerships, the use and benefits of partnerships become a part of the institution's culture and way of day-to-day operation.

- *Generate Mutual Benefit:* Finding win-win relationships is a key to sustaining lasting partnerships.

- *Expand Geographic Boundaries:* Learning partnerships that make use of regional, state, national, and international opportunities can sometimes significantly enhance the benefits of collaborating.

- *Make a Part of Strategic Planning:* Learning partnerships need to be planned for in a serious and foresighted way. Many partnerships need a long time to build into productive relationships. Institutional needs must be put on a planning time horizon with partnership building.

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CHAPTER FOUR:
BENCHMARKING LEARNING STAFF AND STAFF DEVELOPMENT*

The learning staff are central to the realization of the learning outcomes which form the aims of NDTYI. Without an effective staff, there is little chance of reaching the expectations for a new design. However, the challenge is not only to select a highly qualified staff, but to keep a staff highly qualified through staff development. Staff are interpreted broadly here to include anyone making a contribution to the learning enterprise—instructors, student services, support staff, administrators; full- and part-time; and on and off campus.

Site Selection

The design specifications described in NDTYI served as the basis for selecting the benchmark site relating to learning staff and staff development. The design specifications are shown in Exhibit 3. The Miami-Dade Community College (M-DCC) site was selected for study in relation to staff development because it particularly focuses on the following NDTYI design specifications:

- *Employs Continuous Quality Improvement:* M-DCC has made a long-term commitment to applying continuous quality improvement processes to the learning experience with standards of excellence that are constantly updated, performance being continually assessed, and rewards and recognition closely linked to meeting standards.

- *Continues To Learn:* Staffing and staff development at M-DCC recognizes the value of lifelong learning for all staff, views lifelong learning as a shared responsibility of individual and institution, provides renewal opportunities in multiple formats, and commits resources (e.g., time, substitutes, and space) for staff development.

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Exhibit 3
Design Specifications for Learning Staff and Staff Development

- *Aligns with Design Specifications for Learning Context, Signature, Outcomes, Process, Organization, and Partnerships:* Staffing and staff development pay close attention to the design specifications for previous design elements.
- *Ensures that Each Learner Is Known and Served Very Well:* Staffing and staff development provide for the needed "wrap-around" support—academic, social, psychological, and physical—needed by each learner in an integrated fashion.
- *Manages Constructivist Learning:* Staffing and staff development support learning that produces learning products valued by the learner and wider community, involves extensive project-based learning, integrates subject matter areas, and use and closely connect community-based learning with school-based learning.
- *Handles Just-in-Time Learning Design:* Staffing and staff development are flexible, innovative, and can effectively manage the design and execution of learning experiences that are very responsive to the needs of learners and the context in which learning is taking place.
- *Builds Learning Communities:* Staffing and staff development attend to the competencies needed to direct the development of strong learning communities such as teamwork, understanding and valuing diversity, establishing trust, balancing freedom and responsibility, and being supportive.
- *Operates as Information Navigator:* Staffing and staff development give priority to the competence of using information systems and guiding other to do the same.
- *Includes Competence in Research and Service Functions:* Staffing and staff development include and integrate the educational functions of learning, research, and service to enhance the learning experience and contribution to community.
- *Employs Continuous Quality Improvement:* Staffing and staff development apply continuous quality improvement processes to the learning experience with expectations of excellence that are constantly updated, performance being continually assessed, and rewards and recognition closely linked to meeting expectations.
- *Continues To Learn:* Staffing and staff development recognize the value of lifelong learning for all staff, views lifelong learning as a shared responsibility of individual and institution, provide renewal opportunities in multiple formats, and commit resources (e.g., time, substitutes, and space) for staff development.

This benchmarking study was based on interviews and observations during a two-day site visit during September 1997, and review of many written materials including policy documents, annual reports, strategic plans, and marketing brochures. Marie Nock, Director of College Training and Development and officed on the Kendall Campus of

M-DCC, served as principal contact and informant. I had the opportunity to interview several staff and faculty members on the Kendall Campus as part of my visit.

Site Background

The commitment to staff development at M-DCC began in the early 1970s with the work of Carol Zion as its Director of the Office of Staff and Organizational Development (she later provided national leadership in staff development as a founder of the National Council for Staff, Program, and Organizational Development). This chapter focuses on the special attention given to staff development at M-DCC beginning in 1986 with initiation of the Teaching/Learning Project which has since won several professional awards and widespread national recognition for excellence (Loumos-Kennedy, 1996). From the start of the project, the central commitment was to improve learning for all students and the focus, while starting with faculty, soon moved to include all staff. Description is provided of the development and recent operation of the Miami-Dade Faculty, Staff, and Program Development Initiative and future plans, the latter charting some bold new directions. Building and sustaining the program and its new directions hold several lessons for designing and implementing new designs for staffing and staff development.

Institutional Background

M-DCC opened in September 1960. It is a two-year, state-supported community college with six campuses and many outreach centers. M-DCC is recognized nationally as one of the largest and best community colleges in the United States. The college is governed by a seven-member District Board of Trustees and a college president. The president at this time is Eduardo J. Padron; the president during the initiation and building of the Teaching/Learning Project described in this study was Robert McCabe. During 1995-1996, enrollments for credit students at M-DCC was 74,060 and for noncredit students was 50,569. M-DCC offers the Associate of Arts Degree, Associate of Science Degree, and Vocational Credit Certificates in Business, Technical, Allied Health, and Public Service occupational areas.

The average age of students is 26 with more than 67% of students attending on a part-time basis. In terms of ethnic mix, 17% of students during 1995-1996 were white, non-Hispanic; 22% were black non-Hispanic; 59% were Hispanic, and 2% were other.

Given this mix of students, M-DCC enrolls the most Hispanic students and the second largest number of black students of any college or university in the United States. M-DCC graduated 5,268 student in the academic year 1995-1996 and has awarded a total of 154,523 degrees since it opened.

With this student base, M-DCC employed 2,292 part-time and 3,526 full-time people in 1995-1996. The faculty is made up of 807 full-time and 1,305 part-time employees. In terms of education, 94% of the full-time faculty hold advance degrees and 21% have earned doctorate degrees (M-DCC, 1996).

This case study focuses on one of the M-DCC campuses, the Kendall Campus, which is located in the southern part of Dade County and a suburb of Miami. The Kendall Campus enrolled a total of 52,912 credit and noncredit students in 1995-1996. Over the time of the Faculty, Staff, and Program Development Initiative reported in this study, the campus has made the most concerted effort at building and sustaining the initiative of all of the M-DCC campuses.

Process Background

The Faculty, Staff, and Program Development Initiative described in this study started in June 1986 when then M-DCC President, Robert McCabe, delivered a concept paper entitled, "Organizing M-DCC To Emphasize Faculty/Student Performance," to a group of 120 faculty and administrators. The paper provides an outline for a multi-year, institution-wide project with a rationale that was centered as follows, "If we were to improve teaching and learning overall and to encourage faculty to take a leadership role in the process, we would have to provide information and support, capture and share the expertise of excellent veteran faculty, raise the status of teaching as a profession, and reward the type of performance we say we value." By late Fall 1986, the Teaching/ Learning Project had a project director and a 26-memoer steering committee. In January, 1987, four subcommittees had been put in place with a focus on institutional values, the teaching/leaning environment, faculty excellence, and new faculty. A total of 38 M-DCC personnel were directly involved in the project.

During 1987-1988, the project focused on raising awareness, expanding involvement, and realizing initial outcomes. Information on the project was shared in

several formats inside the college, to the wider community, and nationally. Two new subcommittees of the steering committee were formed with a focus on classroom feedback and learning to learn and faculty advancement, bringing nearly 60 college personnel directly into involvement with the project. External consultants were brought in to help with the work of the steering committee and subcommittees. Products of the year included a statement of institutional teaching/learning values to be included in all college publications, a new orientation process for new faculty, availability of two new graduate courses on teaching and learning (effective teaching and learning, research in the classroom), two videotapes for faculty on exploring classroom feedback and cultural differences in learning styles, and secured funding for 24 endowed teaching chairs.

In the third year of the project, 1988-1989, the project turned to action on its recommendations and further involvement of college personnel. Four new subcommittees were formed with a focus on part-time faculty, role of administrators, support for faculty, and nonclassroom faculty—the project now directly involved just over 100 personnel. Major outcomes of the year were a Statement of Faculty Excellence and the Faculty Advancement Policies and Procedures. The Statement of Faculty Excellence served to "provide a common understanding of what it means to perform in an excellent manner at Miami-Dade Community College" (M-DCC, n.d., a). The statement would be used as a foundation for assessment of potential new faculty, annual performance reviews of existing faculty, as a guide in the development and review of portfolios for faculty tenure and promotion decisions, and for faculty to judge their own performance and make decisions about professional goals and development. The Faculty Advancement Policies and Procedures put the standards and their use into operating policy. There was extensive involvement of the faculty in putting the Faculty Advancement Policies and Procedures together and they were passed by faculty referendum in April 1989. By June 1989, 33 endowed chairs had been funded.

During the fourth year of the project, focus was on revising and fine-tuning the work of previous years based on the experience of the first year of implementation. A Collegewide Student Feedback Questionnaire was pilot tested to collect information based on the Statement of Faculty Excellence. The fifth year of the project, 1990-1991, brought 48 additional college personnel into the project with the forming of two new subcommittees of the steering committee with a focus on support staff involvement and administrator advancement. These were major milestones as they brought representation of all personnel

categories of the colleges directly into the Teaching/Learning Project. Another milestone during this year was passage by the faculty and college executive committee of the Faculty Advancement Procedures which put the Faculty Advancement Policies and Procedures into operation—the professional development program envisioned for the Teaching/Learning Project had been institutionalized. Two other milestones of the year were the completion of the appointment of Teaching/Learning Center Project Directors at all campuses and much more extensive pilot testing of a Student Feedback Questionnaire. The charge to the Teaching and Learning Centers was as follows:

- Develop a core program, consistent collegewide, designed to implement the outcomes of the Teaching/Learning Project.
- Continue to provide the traditional, campus-specified, staff and program development opportunities.
- Offer support for instructional design, including classroom research and expanded application of technology. (M-DCC, n.d., a)

During the sixth year, 1991-1992, focus was on implementing and revising the Faculty Advancement Policies and Procedures. For the first time, college decisions on performance review and tenure and advancement were made on the basis of the new procedures. Twenty-five endowed chairs were awarded to faculty members who were judged to be excellent performers by their peers. M-DCC was the first community college in the nation to use the idea of endowed chairs to recognize faculty performance. Each chair represented a contribution of $45,000 from individuals, businesses, and civic groups and was matched by $30,000 from the State of Florida. Faculty receiving an endowed chair hold them for three years and get a $7,500 award annually for their use. Also during 1991-1992, the Statement of Administrator Excellence, parallel to that for faculty, was adopted by the M-DCC Board of Trustees (M-DCC, n.d., b).

The seventh and eighth years of the Teaching/Learning Project, 1992-1994, continued to focus on assessing the implementation of staffing and staff development policies and procedures and moving closer to full institutionalization. Several of the project's subcommittees stayed in place to play a significant role in the troubleshooting, assessment, and revision process. Milestones during this year included (1) approval of the Statement of Support Staff Excellence (making a full set for all categories of college

personnel); (2) testing of an Administrator Feedback Questionnaire, similar in purpose to the student feedback questionnaire for faculty; and (3) soliciting comments for improvement of the new Faculty Advancement Policies and Procedures. By the end of the year, accomplishments also included the first doctoral degree awards for the joint University of Miami–Miami-Dade Community College's doctoral program, voluntary participation of 78% of full-time faculty and 59% of part-time faculty in the collegewide student feedback program, and the award of the seventy-fourth endowed chair. The college was also awarded the first Theodore M. Hesburgh Award for faculty development to enhance undergraduate teaching by a national panel of higher education practitioners, for the accomplishments of the Teaching/Learning Project. At this point, with many of its products a part of the M-DCC culture, plans were being made to phase out the Teaching/Learning Project and continue institutionalization of its purposes and activities in other ways (M-DCC, n.d., c).

Process Objectives

The objectives of the Faculty, Staff, and Program Development Initiative at M-DCC, began as the Teaching/Learning Project, were explicit from the beginning. The three objectives were as follows:

1. To improve teaching and learning with focus on the increasing numbers and needs of nontraditional students to provide them with a high-quality education.

2. To make teaching at the college a professionally rewarding career by establishing high performance standards to challenge faculty and to enable them to take pride in their accomplishments.

3. To make teaching and learning the focal point of M-DCC's activities and decisionmaking processes.

Key Features

The key features of the initial phase of the M-DCC Faculty, Staff, and Program Development Initiative, the Teaching/Learning Project, were (1) declaring institutional values, (2) focusing on faculty excellence, (3) creating a supportive teaching/learning environment, and (4) nurturing new faculty. While several of the polices and procedures resulting from the Teaching/Learning Project became collegewide operations, a new organizational entity, the Teaching and Learning Center, was put in place on four of the campuses to reflect the high priority of and to give special attention to faculty and staff development. The center with the most intensive program of work emerged on the Kendall Campus, the focus of this case study.

Teaching/Learning Project

The major features of the Teaching/Learning Project are described below.

Declaring Institutional Values

Early on a decision was made to ground the Teaching/Learning Project in a set of institutional values focused on the importance of teaching and learning to the college's success. The values that form this statement resulted from extensive faculty and staff involvement and are as follows:

- Learning
- Change to meet educational needs and to improve learning
- Access while maintaining quality
- Diversity in order to broaden understanding and learning
- Individuals
- A systematic approach to decisionmaking
- The partnership with the community

Focusing on Faculty Excellence

The Statement on Faculty Excellence (M-DCC, 1990) serves as a base for the features of the Faculty, Staff, and Program Development Initiative at M-DCC focused on faculty. The Statement of Faculty Excellence defines the qualities and characteristics of excellent faculty in four categories: (1) their own motivation and their ability to motivate others, (2) their interpersonal skills, (3) their knowledge base, and (4) their skill at applying that knowledge. Two of the assumptions stated at the beginning of the statement make it clear that definition of faculty excellence applies to all M-DCC faculty, whether assigned primarily to classroom-based activities or nonclassroom areas—they are all involved in teaching/learning and student success. The qualities and characteristics noted under each of the four categories are as follows:

Motivation

- Are dedicated to their profession in higher education and the community college's philosophy as defined at M-DCC
- Are enthusiastic about their work
- Set challenging individual and collective performance goals for themselves
- Set challenging performance goals for students
- Are committed to education as a profession
- Project a positive attitude about the ability of students to learn
- Display behavior consistent with professional ethics
- Are concerned with many aspects of students as individuals, not just in their role as learners

Interpersonal Skills

- Interact positively with students and with their colleagues
- Treat all individuals with respect
- Respect diverse talents

- Work collaboratively with colleagues
- Are available to students
- Listen attentively to what students say
- Are responsive to student needs
- Are fair in their evaluation of students
- Present ideas clearly
- Create a climate that is conducive to learning

Knowledge Base

- Have the intellectual skills requisite for superlative performance
- Are knowledgeable about their work areas and disciplines
- Are knowledgeable about how students learn
- Integrate current subject matter into their work
- Provide perspectives that include a respect for diverse views
- Do their work in a well-prepared and well-organized manner

Application of Knowledge Base

- Not only know their professional fields and established principles of learning well, but they put these principles of learning into practice as they carry out their responsibilities relating to the teaching and learning process
- Provide students with alternative ways of learning
- Stimulate intellectual curiosity
- Encourage independent thinking
- Encourage students to be analytical listeners

- Provide cooperative learning opportunities for students
- Give constructive feedback to students promptly
- Give consideration to feedback from students and others
- Provide clear and substantial evidence that students have learned.

As noted above, the Statement of Faculty Excellence was put into operation with the approval by faculty and administration of the Faculty Advancement Policies and Procedures. The most recent edition of these policies and procedures (M-DCC, 1994) states that they are "designed to encourage and support the professional development of faculty members, to align the college's reward system with professional performance as defined by the college's Statement of Faculty Excellence, and to ensure consistency and equity in the application of the policies and procedures" (p. i). The policies and procedures address performance reviews; the performance portfolio; continuing contracts, promotion, and endowed chairs; and a process to monitor and review the polices and procedures. A set of philosophical concepts are set forth to provide direction for developing policies and procedures relating to faculty advancement. The guiding concepts are as follows:

- Polices and procedures will be geared toward support and development.
- The individual faculty member will be responsible for his or her own advancement.
- Multiple sources of information will be relied on.
- Information will be obtained systematically.
- There will be consistent, equitable application of polices and procedures from department to department and across campuses.
- Advancement will be based on performance, performance which has been judged of value by the individuals who collectively make up the college.
- The decisionmaking process will be democratized.
- There will be checks and balances built into the system. (p. i)

Creating a Supportive Teaching/Learning Environment

Two of the major products of the Teaching/Learning Project seem to make major contributions to creating a more supportive teaching and learning environment at M-DCC. These are the approved statements of excellence for support and administrative staff.

Statement of Support Staff Excellence

The introduction to the Statement of Support Staff Excellence (M-DCC, 1993) notes,

> No educational institution can hope to succeed in its mission to provide high quality learning opportunities for its students without the total commitment of all its personnel. . . . The critical role of faculty in the teaching/learning relationship is obvious. Not nearly as obvious, perhaps, but just as critical is the role played by support staff in the advancement of student learning.

The assumptions listed as underlying the statement include the following:

- The intent of these statements is to encourage and enhance support staff involvement in the teaching and learning process.
- The qualities and characteristics representative of excellence apply equally to the four classifications of support staff (secretarial/clerical, technical/paraprofessional, service/maintenance, and skilled craft).
- Excellent support staff at Miami-Dade Community College strive to improve the quality of teaching and learning by recognizing students as the college's priority and by responding in a positive manner to their needs.

The qualities and characteristics of excellent support staff are described in five categories: (1) Motivation, (2) Professional Performance, (3) Interpersonal Skills, (4) Knowledge Base, and (5) Leadership/Supervision. For illustrative purposes only the statements relating to Knowledge Base are presented here:

- Possess the knowledge and technical skill required for outstanding performance
- Are knowledgeable about issues that impact teaching and learning
- Are knowledgeable about their work areas
- Are knowledgeable about college policies and procedures

Statement of Administrator and Professional Staff Excellence

The M-DCC Statement of Administrator and Professional Staff Excellence (M-DCC, 1992) has a similar introduction and format to the statements for support staff. The qualities and characteristics of excellent administrators and professional staff are described in five categories: (1) Leadership/Supervision Skills, (2) Professional Performance, (3) Interpersonal Skills, (4) Motivation, and (5) Knowledge Base. For illustrative purposes, only the statements relating to Leadership/Supervision Skills are presented here:

- Are leaders in their fields and are respected members of their administrative units
- Recognize that the first constituency to be served is the M-DCC student and make decisions accordingly
- Provide leadership for the development, implementation, and evaluation of the teaching and learning process
- Actively seek the resources necessary to support institutional programs, services, and goals
- Use power equitably and appropriately
- Accept responsibility for their own performance and, if they are supervisors, also accept responsibility for the performance of their administrative units
- Exhibit positive behavior which they encourage in others
- Use leadership strategies that are appropriate for the situation
- Actively seek students and personnel who reflect the diversity of the community and provide opportunities for their growth
- Respond to community needs and issues in ways that are consistent with M-DCC's mission.

M-DCC is currently working on the feedback system for staff in supervisory roles that will assist in improving the performance review process to help put the statement of administrator and professional staff excellence into more consistent and effective practice.

Nurturing New Faculty

The delivery of staff development for new faculty and staff takes the form of orientation sessions and a mentoring program by veteran staff. Both full- and part-time faculty are included in the program.

Teaching and Learning Centers

As a result of the Teaching/Learning Project, at one time four of the then five campuses of M-DCC had an operating Center for Teaching and Learning with a full-time director, an identifiable staff, and budget. However, by 1996-1997, only two of the campuses had Centers for Teaching and Learning of this type in place—Kendall and North. While a number of factors accounted for the elimination of the centers on the other campuses, the primary cause was a state cutback in fiscal resources. Campus administrators had to make hard decisions on which programs and staff to cut on every campus. As will be apparent in the following section on Future Directions, M-DCC is now moving to a collegewide staff development strategy which will ensure more consistent service to each of the campuses. The Teaching and Learning Center for the Kendall Campus, in 1996-1997 known as the Center for Faculty, Staff, and Program Development (n.d., a), defined its mission as

> a comprehensive resource for professional development and performance excellence. The Center is a place where any employee with an idea can receive support, guidance and access to a network of internal consultants who can help the employee achieve campus goals and meet student needs. (p. 1)

The Center for Faculty, Staff, and Program Development (n.d., b) on the Kendall Campus had the following goals for 1996-1997 as listed in its *1996 Annual Report*:

- To enhance the effectiveness of faculty, adjunct faculty, staff, and administrators in dealing with students, faculty, and staff.
- To provide instructional design consultation and support for curriculum and instructional development projects.
- To provide leadership resources and coordination for the campus's comprehensive effort for faculty, staff, and program development.
- To promote new initiatives for program development.

- To provide leadership in the use of new delivery systems for instruction and information (e.g., electronic forum, learning communities, distributed learning, web pages, and service learning).
- To direct the services of the IBM Instructional Technology Center and the Macintosh Multimedia Resources Center.
- To provide teacher effectiveness information, training, and support for faculty.
- To coordinate the development of the Campus Master Plan for Integrating Technology into the Curriculum.
- To identify and measure indicators of increased productivity in teacher effectiveness as a result of using technology.
- To provide orientation experiences for new faculty, part-time faculty, support staff, and administrators who are new to their roles.
- To provide training and support on identified areas of the faculty advancement process for faculty, administrators, and committee members.
- To provide information, registration, and coordination for the University of Miami course: Teaching, Learning, and Assessment in the Community College and the Florida International University doctoral cohort.
- To prepare New Faculty Selection Committees to assume their role.
- To support the development and integration of instructional technology into the curriculum by providing training, consultation, and support in the use of computers, the Internet, videodisks, CD-ROMs, e-mail, and multimedia in the teaching/leaning process.
- To provide process consultation/facilitation for campus/college groups.

To guide the planning and implementation of these goals, the Kendall Campus Center had put in place a Center Advisory Committee which had the following subcommittees:

- Academic Affairs Subcommittee

- Administrative Training Subcommittee
- Support Staff Training Subcommittee.

The center employed a staff of about 15 professional and support staff, of whom five are full-time including the director. Some of the staffing was made up of faculty who are on temporary or part-time leave from teaching positions to work on projects in the center. The center had a budget of about $450,000 from regular M-DCC funds and engaged in a wide variety of externally funded training and development projects to enhance its size and funding.

The Kendall Campus Center described its services and resources in the following categories:

- Workshops/Seminars
- Resource Information
- Travel
- Instructional Design and Development
- University of Miami and Florida International Courses/Programs
- Consultation
- Instructional Technology

Each of these categories of services and resources had a wide variety of activities included.

Impact

The impact of the staff development program can be seen in the 1996 Annual Report for the Center for Faculty, Staff, and Program Development on the Kendall Campus. The report is organized by major "development goals." The goals and illustrative accomplishments under each were as follows:

- To enhance the effectiveness of faculty, adjunct faculty, staff, and administrators in dealing with students, faculty, and staff—211 workshops conducted running the gamut from orientation for adjunct faculty, to team building, to teaching and learning on-line, to basic first aid for security officers; coordinating a Support Staff Day; planning 72 staff trips to conferences, workshops, and seminars (41 out of the county); and producing a *Technology Resource Handbook.*

- To provide instructional design consultation and support for curriculum and institutional development projects—16 curriculum and instructional development projects were supported addressing topics such as International Relations Course Web Pages, Revision of Experiencing Art, Song Writing and Music Composition (Interactive CAI), Historical Architectural Survey (CD-ROM), and a Visual Plant Database (Interactive Videodisk).

- To provide leadership, resources, and coordination for the campus's comprehensive effort for faculty, staff, and program development—leadership was provided by accomplishments such as instituting new programs that promote distance learning, promoting the expansion of departmental and faculty web pages, and coordinating the Campus Future Search Conference, "2001: Kendall Campus."

- To promote new initiatives for program development, ten technology practicums were sponsored for a wide range of departments with descriptions such as computerized conversion of course lecture notes; produced a video atlas and video disc, using Course Builder software package to develop a tutorial; developed interactive practice tests; and designed and developed a web site.

- To provide leadership in the use of new delivery systems for instruction—emphasis during the year was on use of the Internet and web-based learning.

- To direct the services of the IBM Instructional Technology Center and the Macintosh Multimedia Resource Center—provided many beginning and intermediate workshops on software such as WordPerfect, Excel, PowerPoint, and ToolBook; increased use of open labs (total sign-ins numbered 519); provided individualized help; set up student orientations; managed the campus web server, and conducted training for area K-12 school staff.

- To provide teacher effectiveness information, training, and support for faculty—provided wide variety of workshops for full- and part-time faculty on topics such as active learning strategies, learning styles, diversity issues on campus, and master teacher seminar.

- To provide support for the development of the Campus Master Plan for Integrating Technology into the Curriculum—served on several of the committees working on this plan.

- To identify and measure indicators of increased productivity in teaching effectiveness as a result of using technology—gathered student feedback on several of the learning projects making use of technology.

- To provide orientation experiences for new faculty, part-time faculty, support staff, and administrators new to their roles—held orientation sessions for groups such as adjunct faculty, new department chairs, and new student assistants.

- To provide training and support on identified areas of the faculty advancement process for faculty, administrators, and committee members—training sessions were provided on topics such as portfolio development for continuing contracts, promotion, and endowed chairs for those preparing portfolios and those doing the reviews.

- To provide information, registration, and coordination for the University of Miami course, Workshop in Education: Teaching and Learning in the Community College and the Florida International University doctoral cohort—the UM course was not offered because there were very few new faculty; a new FIU doctoral cohort was started.

- To prepare selection committees to assume their roles—no new faculty were hired and so no selection committees for faculty needed training; provided training for an administrative selection committee.

- To support the integration of instructional technology into the curriculum by providing training, consultation, and support in the use of computers, videodisks, and multimedia in the teaching/learning process—in addition to workshops already

noted, provided individual help to nearly 150 individuals on topics such as authoring and presentation, scanning, video editing, and web authoring.

- To provide process consultation/facilitation for campus/college groups—provided assistance to a wide variety of committees and groups.

- To schedule the use of the Conference Center by the campus and college—scheduled a total of 614 events involving 13,344 people.

Future Directions

Major new directions have been set forth for the M-DCC Faculty, Staff, and Program Development Initiative for implementation during 1997-1998. The new directions were developed by a Human Resource Development Reengineering Team in light of the profound impact on the college of dwindling resources, a changing work environment, rapidly evolving technology, demands of external stakeholders, and changing workforce needs. The work of the Reengineering Team focusing on the human resources of the college, and described in a report entitled "Recommendations for Training and Performance Management," included assessing current practices relating to training, supervisory training, and performance appraisal of professional and staff personnel; reviewing public and private sector programs; Internet searches; and obtaining feedback from one-to-one interview, town hall meetings, and focus groups of faculty, staff, and administrators. The recommended future directions for training and performance management at M-DCC are as follows:

Recommendations on Training

- Establish collegewide and campus training priorities annually

- Institute a formal training program for employees, full- and part-time, driven by the college's mission, vision, values, and goals.

- Establish core training curricula to address required performance standards.

- Retain autonomy for individual campuses in addressing their unique training needs.

- Ensure collegewide access, consistency, equity, and quality of training for full-time, part-time, and District personnel of all six campuses.
- Initiate a required training program in effective supervision for all supervisors through the level of executive management.
- Allocate funds equitably to support training programs.
- Evaluate the effectiveness of training based on trainee's ability to transfer the learning to the workplace.

Recommendations on Performance Management

- Adopt a standard process for managing the performance of support staff and professionals. The process will have three phases: (1) setting performance expectations, (2) coaching throughout the year, and (3) performance appraisal.
- Institute a consistent, prescribed performance appraisal process for support staff.
- Institute a consistent, prescribed performance appraisal process for professional staff.

The recommendations about training address major concerns regarding best use of the state mandated two percent of budget that must be spent on staff and program development (about $1.8 million for M-DCC in 1996-1997), substantial current variation in training and development efforts among the campuses, and needs for a systematic process to access training needs at an institutional level and match training with college priorities. As regards performance management, the recommendations address the concerns about formation and consistency in the performance management process for support and professional staff.

Design Implications

Some important implications can be gleaned from the M-DCC staff development program journey for designing, staffing, and staff development. Based on this case study and a prior study of the M-DCC staff development initiative (Loumos-Kennedy, 1996), the following implications are evident:

- *Administrative Backing:* There is no substitute for support from top administration of a TYI for staff development initiatives. They play a key role in securing adequate resources and encouraging participation.

- *Focus on Learning:* The staff development initiative cannot, in the end, be grounded in or operated for the self-serving benefits of staff. The staff development initiative must have its impetus and continued justification and accountability in effects on learning.

- *Support Individual Development:* The staff development initiative must be responsive and in tune with the individual development needs and plans of each and every staff member. The learning expectations, process, and organization must fit the specific context and situation of the individual staff member.

- *Include All Staff:* The staff development initiative must include attention and focus to all of the staff who affect a particular topical area related to student learning. The initiative, to be effective, will need to consider attention to faculty (full- and part-time), support staff, and administrators.

- *Align with Organizational Goals:* The staff development initiative must be directly responsive and productive in terms of the institution's needs and goals, both short- and long-term. With a shortage of resources, all initiatives will and should stand the test of relative contribution to organizational mission and plans.

- *Build a System:* The staff development initiative must be thought about and designed in a comprehensive fashion so the components can be mutually reinforcing. That is, the initiative must align with organizational goals, address clear and accepted standards of good performance, respond to individuals needs, be reinforced by performance review, and be compensated for in reward systems.

- *Support with Resources:* The staff development effort must have adequate resources to deliver what is planned and promised. Staff development, as with student learning, takes resources on a regular and dependable budgeting cycle.

- *Use Participative Decisionmaking:* The benefits of directly involving those who will be the target and beneficiaries of staff development in all components of the staff development system cannot be underestimated. Most staff development initiatives

are voluntary, and even if they are not, learning is an individual matter; for staff development initiatives to have the desired effects, the participants must be supportive, which comes, in part, with participation in deciding what and how staff development will occur.

- *Account for Results:* The staff development effort must develop a deserved reputation for quality through careful planning, continuously monitoring impact, and quickly making needed changes.

- *Make Long-Term Commitment:* Improving an institution through staff development does not occur quickly. Rather, it requires a commitment of many years to put effective systems into place, remove disincentives, reach a critical mass of staff, and support programmatic change.

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CHAPTER FIVE:
BENCHMARKING THE LEARNING ENVIRONMENT (TECHNOLOGY)*

Among the barriers to major change is a lack of constructive models for the learning environment. Within U.S. higher education, innovation in systems development has been stalled as design revolves around concepts and processes that have been reworked for decades, if not centuries. Trapped in a continuing cycle of duplication, the higher education system is recognized as being roughly equivalent to the aging infrastructure of the facilities that encase it. Rigid and inflexible, the system is cracking under the impact of now turbulent forces imposed by global economic and demographic realignment, a communications revolution, the re-valuation of knowledge, and an expanded public to serve.

New Designs for the Two-Year Institution of Higher Education provides a structured analysis of design criteria for institutional environments as they might look in the 21st century. Linked to the design specifications identified by NDTYI, the exemplary processes identified in this chapter provide a benchmark for institutions or systems addressing technology as a critical component of institutional design and improvement.

Site Selection

Site selection is core to the benchmarking process. The design specifications described in NDTYI guided the site selection process. Specifications identified for the learning environment in NDTYI (Copa & Ammentorp, in press) are shown in Exhibit 4.

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* This chapter was written by Jan Doebbert, Dean of Technology at Alexandria Technical College. He is also a doctoral student in the Leadership Academy for Two-Year Institutions of Higher Education at the University of Minnesota and this research is part of his doctoral study project.

Exhibit 4
Design Specifications for Learning Environment

- *Aligns with Learning Context, Signature, Outcomes, Process, Organization, Partnerships, and Staffing:* Learning environment pays close attention to the design specifications for previous design elements.
- *Includes Multiple Settings:* Learning environment includes consideration of all possible settings which can support the desired learning experiences. It includes, but is not limited to, school buildings.
- *Dissolves Borders Among Learning Settings:* Learning environment makes strong and visible connections among learning settings.
- *Develops a Coherent Network of Learning Settings:* Learning environment is made up of a carefully constructed, yet dynamic and constantly changing, pattern of settings needed for effective learning experiences.
- *Adapts Quickly to the Needs of the Learning Experience:* Learning environment can accommodate a variety of learning experiences in the same space and time.
- *Provides a Sense of Learner Identity:* Learning environment gives learners a sense of identity, sometimes associated with place but increasingly with the learning signature and with what is learned and how it is done.
- *Enhances Social Connectivity and Feeling of Community Among Learners and Staff:* Learning environment encourages and supports close and sustained interaction among learners and between learners and staff central to a feeling of community.
- *Responds to Differences in Learners:* Learning environment is responsive to the needs of learners who vary in age, socioeconomic status, cultural background, prior learning experiences, full-time versus part-time status, and learning style.
- *Provides for Both General and Specialized Study:* Learning environment provides the settings conducive to development of general and specialized competence in order to reach learning outcomes.
- *Enhances Informal Learning:* Learning environment supports and encourages informal learning and the interaction and mutual benefits of informal and formal learning.

As a component of the learning environment, technology design features are imbedded in the design specifications of the learning environment. They reflect those broad assumptions that will support institutional viability as change continues to redefine work, family, and community life. The design specifications for technology in the learning environment suggest the following:

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- Learning work-spaces will expand to include home, work, community, and worldwide settings.
- Multiple means of access to learning, information, and support need to be provided.
- Connectivity that supports collaborative and work-group learning is essential.
- "On demand" support and guidance for technology systems is a requirement.
- Learning enterprises and systems of enterprises must be designed with the capacity to change and be upgraded quickly and effectively.

Identification of an appropriate site was accomplished through a process of scanning to identify institutions that are recognized for a developed technology environment; review of Internet and printed summaries of institutional comparisons; and finally contacting specific campuses through phone interviews, printed materials, and web sites.

To facilitate breakthrough modeling and application of NDTYI relating to the element of learning environment, the Higher Education and Advanced Technology (HEAT) Center at Lowry: A Colorado Community College and Occupational Education System Innovation was chosen as a benchmark site because of its exemplary practices in the area of technology in the learning environment. Practices presented are limited intentionally to provide focus on technology in the learning environment.

The request for the HEAT Center to participate as a benchmark institution for NDTYI reflects the strong link between specifications established for an effective redesign of institutional learning environments and institutional practice at the HEAT Center. From the perspective of technology, the HEAT Center drew particular attention through its state-of-the-art Education Technology Training Center and its partnering with Lucent Technologies to design technology into the entire community being re-created on the former Lowry Air Force Base.

The following are a more comprehensive listing of the practices performed at the HEAT Center that have been recognized for contributing to excellence in a technology-enhanced learning environment:

- Integrated site-based and distributed learning
- Focused educational objectives limited to specific themes or enterprises
- Primary emphasis on applications of knowledge that make learning meaningful
- Designed access and articulations that support lifelong learning
- Vertically integrated delivery within related industries through centers of excellence
- Advanced instructional technology utilization
- Organized formal alliances with educational and industry partners

This benchmarking study was based on a two-day site visit in August 1997, personal interviews with the HEAT Center's leadership, a review of institutional documents, and follow-up confirmation of information with site representatives.

Site Background

The HEAT Center is a developing education center housed on the site of the former Lowry Air Force Base. The campus occupies 154 acres of land centrally located to Denver and the adjoining metropolitan area. Through public conveyance, the land and approximately 1,000,000 square feet of classroom, laboratory, dormitory, and auxiliary space was transferred to the Colorado State Board for Community Colleges and Occupational Education in 1994. While in a continuing process of renovation and expansion, the HEAT Center at Lowry now is the site for the delivery of programs offered by six participating community colleges. The HEAT Center at Lowry also provides training and assistance through private sector alliances and affiliated baccalaureate and graduate colleges and universities.

The HEAT Center's (1997) mission is "to develop a technology environment of facilities, laboratories, models, demonstrations, and business opportunities undergirded by open systems of telecommunications and information networking for virtual teaching and learning on-site, and through the utilization of cyber-technologies in Colorado, throughout

the nation and internationally" (p. 1). This mission links technology with teaching and learning as critical components of the center.

What the mission does not convey is the intensity of commitment toward becoming responsive to the needs of workforce preparation that has been demonstrated by leadership of the Colorado Community Colleges and Occupation Education System (CCCOES) and the HEAT Center. Benchmarking against the German Fraunhofer-Gesellschaft (FhG), Japan's KOHSETSUSHI, and Singapore's system of total enterprise development has provided a reference for defining technologies to be more than computers. Technologies are viewed as innovative and dynamic applications of mathematics and science. The commitment to both learners and communities is that education provides access to those technologies in an integrated, multidisciplinary format that will prepare individuals to contribute to the economic competitiveness of Colorado and to the well-being of multiple communities. The rationale, articulated in the HEAT Center Master Plan, supports the following objective:

> In Colorado, manufacturing and exports continue to increase in importance along with information networks and telecommunications. It is within the sophisticated technologies and systems that drive these industries that the human resource factor becomes so critical to the competitive posture of the individual companies and the industry as a whole. (Goodwin, 1994, p. 2)

While the demand for applied technology-based training is expanding, barriers persist. The more recent and the more sophisticated technologies become, the more expensive it is to capitalize real work experiences and to maintain instructional competencies in those technologies. For Colorado, the HEAT Center at Lowry addresses a need to expand system capacity, a desire to maintain the integrity of existing community campuses, and a requirement of leveraging resources if advanced technology programming is to be developed. Functioning as a broker of facilities and integrated programs, the HEAT Center facilitates delivery of related programs from multiple community colleges. The HEAT Center provides facilities and equipment that are shared among the programs while each individual community college continues to "own" its program. Administratively and financially, the home-base college benefits of program enrollment are maintained. Subsequently, the HEAT Center is financially supported through facility lease arrangements with the individual colleges and administrative support from CCCOES. Student services, admissions, and marketing are shared enterprises between the HEAT

Center and participating colleges. The result is a cooperative system of educational delivery that utilizes the dual strengths of localized campuses and centralized resource management.

The HEAT Center concept leverages resource management beyond the community college system. Major benefits for students, the workforce, and CCCOES are being created through private sector alliances and through affiliations with advanced degree colleges and universities. Moving beyond traditional custom training, the HEAT Center provides an environment that blends research and development, research and application, and economic development. Utilizing state-of-the-art equipment—both industry sponsored and publicly funded—the HEAT Center at Lowry brings the resources of graduate-level research, industry applications, and management into a synergistic new model for cooperation. By design, staff development and student learning are enhanced through an environment of interchange between individuals representing diverse perspectives and skill levels. Potentially, facilities are utilized concurrently by commercial professionals, higher education faculty, industry researchers, students, and Colorado education systems management. The result is a real work environment that supports excellence in learning while operating as a regenerative system for maintaining curriculum relevance and staff development.

The HEAT Center at Lowry is not a college. It is a work-space that is shared. Unlike the traditional model for higher education, the HEAT Center is a location that is managed as a focused learning environment. The economic and political viability of the center is dependent upon the strength of the relationships that link the location to multiple support systems, and funding is enhanced from strategic sharing rather than from autonomy. Evidence of impact surfaces through recognizing the six community colleges that are participating in the academic program offerings of the HEAT Center. The HEAT Center also houses the Colorado Electronic Community College, is a delivery site for the Western Governors University (a consortium of higher education institutions), and has established alliances with five public or private universities. While students are enrolled within a single college, they benefit from the integrated resources of all of the colleges.

Process Objectives

An assumption for this benchmark study is that environment influences learning. Technology as a component of learning environment is viewed as being a major driver for impacting learning. There appear to be at least three objectives for technology-enhanced learning environments as demonstrated at the HEAT Center. These include learner responsiveness, learning effectiveness, and economic benefit to learners and stakeholders:

- Learner responsiveness is facilitated through expanded learner choices. As indicated in the specifications of the learning environment, anytime, anywhere, collaborative learning has been identified as a critical component of new learning environments. Self-paced learning is responsive to individual needs. Expanded access within and across borders is supported through digital technology. And new communities of learners are developed as geographical boundaries are eliminated. Customers simply have more choice in a technology-rich environment.

- Learning effectiveness can be enhanced through the utilization of technology. Through increased options for collaboration and communication, interactive data presentation, self-directed discovery, simulations, and electronically mediated graphical presentation the learning environment expands. Assessment, support, and delivery are integrated into single source management directed by learners.

- Economic benefit is less tangible. Technology is expensive. If evaluated only from costs of initial delivery, technology appears to be an economic black hole. However, the objective of the HEAT Center is to maintain the competitiveness of the Colorado workforce. The HEAT Center Master Plan identifies the goal for CCCOES to "become the catalyst to create a national model that addresses how public/private collaboration can effect an affordable accommodation of facilitating and maintaining a 'world-class' work force" (Goodwin, 1994, p. 15).

Key Features

Table 1 provides a guide to the benchmarked design specifications and links them to associated key process features. The table separates key features that relate to physical technologies and features that essentially are describing systemic relationships. The key process features resemble the hardware/software relationships of computer systems. As the key features are implemented, the distinction between technologies and associated applications blend into a learning environment that meets the specifications outlined in NDTYI. Following the table, the individual features are demonstrated through description of associated initiatives of the HEAT Center.

Table 1
Comparison of NDTYI Learning Environment Specifications and HEAT Center Initiatives

Learning Environment Specification	Key Features of Designed Technology Environment	HEAT Center Initiatives Referenced
Includes multiple settings	Integrates site-based and virtual instructional environments	HEAT Center at Lowry shared campus
Develops a coherent network of learning settings	Supports collaborative meaningful learning experiences	Colorado Venture Center: Colorado Advanced Photonics Technology Center
Enhances informal learning	Supports user proficiency and independence	Education Technology Training Center
Provides for general and specialized study	Accommodates requirements of an "enterprise" or theme-focused community of learners	Rocky Mountain Manufacturing Academy
Dissolves borders among learning settings	Facilitates lifelong access to system benefits from multi-locations and levels of experience	Academic Articulation: *Transformations*
Adapts quickly to needs of learning experience	Accommodates redesign	Multiple ownership of programs: Industry Alliances

Integrates Site-Based and Virtual Instructional Environments

Colorado provides students with a combination of sophisticated on-site technical training facilities and electronically delivered program options through the HEAT Center that can be accessed from home, work, or beyond. The blend is intentional and focused. Students continuously operate in multiple environments throughout the learning process. While enrolled in a college of choice, students also utilize the resources of the HEAT Center to access education focused on applications of specific technologies. As part of the HEAT Center experience, students are interacting with communities both larger and smaller. They become part of learning workgroups in design or application projects. They enroll as a member of a cohort of individuals comprising a program. And, they have individual study choices via electronically facilitated learning options, industry internships, or multimedia instruction. Concurrently, they are also participating in much larger communities as members of specific industry clusters, the community college system, and Colorado higher education.

To facilitate the delivery of virtual instruction, the center, through a private/public alliance with Lucent Technologies, is designing and implementing a cutting edge optical electronic infrastructure development project that will be used to showcase communications technology and connectivity. The project is part of a plan for integrating a "digital city" concept for a developing residential and business community across the former Lowry base.

Supports Collaborative Meaningful Learning Experiences

There are multiple centers or academies at the HEAT Center that are serving as integrators for related programs. The Rocky Mountain Manufacturing Academy, the Colorado Advanced Photonics Technology Center, the Education Technology Training Center, and the Colorado Venture Centers are referenced in this report. These centers are models for building educationally effective utilization of technology infrastructure.

The Colorado Venture Centers are focused on commercializing research and development. Unlike a business incubator program that supports business expansion or business start-up based on proven technologies, the Colorado Venture Centers support development of innovation. For example, Sangamo Biosciences, Inc., was initially located at the HEAT Center through a relationship with the Colorado Venture Centers. The

objective was to commercialize DNA sequencing technology. With Sangamo on site at the HEAT Center, biotechnology students who were enrolled through the Community College of Aurora were utilized as interns in this leading edge environment. Faculty members were allowed early access to industry research and development information, and students and faculty both had the opportunity to utilize the benefits of real work learning experiences. The experiences were based both on the connectedness of the information infrastructure, and the connectedness of linking industry, research, technology, economic development, and education together.

The Colorado Advanced Photonics Technology Center is a second model of the connections being established across industry, research, technology, economic development, and education. A strategic alliance has been created that will link the Colorado Advanced Technology Institute, the University of Colorado, Colorado State University, Pueblo Community College, Meadowlark Optical, and other industry partners. Again, the alliance is narrowly focused on a specific technology and it is highly integrated vertically from research to application and manufacturing. That focus generates support for capital-intensive technology investments such as the pilot production line for miniature liquid crystal display devices that is being created on the HEAT Center campus.

Supports User Proficiency and Independence

Support for technology has been elevated to a crisis level for many institutions and workplaces. Each industry is immersed in its own translation of the same story. There are limited numbers of individuals competent to support the continuing changes of information technology and other advanced applications of technology. Yet the pressure is unrelenting to adopt the technologies. From installation to operation, people have to be upgraded continuously.

The Education Technology Training Center (ETTC) is one contribution to the solution. A showcase renovation project at the HEAT Center campus, the ETTC

> [p]rovides state of the art technology and expertise to educators and others who wish to implement technology for the improvement of instruction. [The] Center users learn to employ and create video, CD-ROM, Internet, video-conferencing, cable, multi-media, and other present and future technology products to provide a richer and more interactive curriculum with unlimited access potential for learners. (Colorado Electronic Community College, n.d.)

Housing ETTC on the HEAT Center campus brings students, faculty members, support personnel, and administration in contact with practicing professionals. Commercial developers are encouraged to lease time at the facility rather than to be permanently located there. The result is a continuing influx of skills and expertise that is shared with the professional staff operating the center, the student assistants, and the faculty.

The benchmark practice of significance at ETTC is the high level of commitment to training for and modeling of technologies. Support for technologies does not imply repair and maintenance—though that should not be ignored. Support includes building competence at all levels and providing a continuing resource for relearning and adopting new technologies. Through the physical location of the ETTC and the capacity for electronic distribution from that center, support can be provided and sustained.

Accommodates Requirements of an "Enterprise" or Theme-Focused Community of Learners

The HEAT Center at Lowry is focused on teaching and supporting applications of advanced technologies in the areas of biotechnology, advanced manufacturing, and information/communication technologies. The HEAT Center, by design, is focusing on providing education for individuals who will fill the role of becoming a techno-professional. A techno-professional is defined as

> [a] *multi-disciplinarian* who *enhances innovation* resulting from advances in technology and communications; *supports research and application* of emerging technology, *interfaces* with the design team, *assumes* for production, and *provides* ongoing technical assistance. (Goodwin, Roe, & Malbrough, 1991, as cited in HEAT Center, 1997, p. 1)

Access has most frequently been defined for education in terms of broadness. Community colleges in particular have operated in the "do anything for everyone" environment of a local service provider. The perspective of creating access in a narrow slice that extends vertically to include students from the secondary level through graduate level of education and beyond for industry upskilling has only begun to emerge as the model for excellence and competitive advantage. While not serving everyone, the HEAT Center expands access to a diverse set of learners from across traditionally unlinked systems.

The Rocky Mountain Manufacturing Academy (RMMA) is the most integrated and developed of the partnerships located at the HEAT Center. Focused on the need for techno-professionals to support Colorado's advanced manufacturing, RMMA is utilizing resources made available through the closure of the Lowry base and the downsizing of U.S. military operations. Accessing precision machining equipment from the Department of Energy/Rock Flats, precision metrology laboratory equipment from the Lowry Air Force Base, and additional resources provided by industry partners and the Colo[illegible]o legislature, RMMA brings "all facets of manufacturing together" (Richardson, 1997, p. 38a). The result is a shared site manufacturing education center that provides training in advanced machining, precision measurement (metrology), automation/robotics, welding (precision joining), photonics and vacuums (lasers), and CAD/CAM. The equipment utilization is maximized as it brings industry workers, student technicians, student engineers, and faculty members together at one location. And all students encounter manufacturing as a system of integrated relationships.

Facilitate Lifelong Access to System Benefits from Multi-Locations and Levels of Experience

Focused educational goals have allowed the HEAT Center to influence academic programming within defined disciplines. While it is not new to develop articulation agreements between two- and four-year institutions, the integrated access concept of the center provides students with benefits. As the Executive Director of the HEAT Center described,

> The benefit is to make students successful. Through quick and easy transitions, students can migrate from a two-year manufacturing curriculum into an applied engineering program. Or, a student that is not being successful in engineering is allowed to stop out with a two-year degree or transfer down into a related less aggressive academic program. (Goodwin, personal communication, August, 1997)

Expanding even beyond the systems of higher education into the community, success is being supported by creating pathways into technology with secondary institutions or through a program such as the Transformations program. Transformations is a fourteen-week, hands-on program teaching fundamentals of applied mathematics, science, and computers, with a focus on preparing women for success in technology-based studies. The center has become a central hub for multiple systems of education and in that role facilitates development of new collaborations.

Accommodates Redesign

The context of a technology learning environment is driven by three-month product cycles, virtual environments that can be re-created on demand, and internationally competitive distributed learning technologies. Times and technologies are continuously changing. Designing the learning environment for technological change requires that flexibility and responsiveness be integrated into the technology and into the systems managing the technology.

The creation of the HEAT Center at Lowry is identified as an innovation of CCCOES. The HEAT Center provides a model for funding and maintaining environments for advanced technology training. It also provides a model for flexibility in educational institutions. The ability to build integrated programming that is focused and responsive has been demonstrated. Now the challenge will be to maintain the position of being cutting edge.

Two unique design factors that contribute to the flexible responsiveness of the campus are (1) the separation of program ownership and delivery and (2) strong industry alliances. The multiple ownership of programs being delivered at the HEAT Center provides a new point of assessment. Specific alliances/academies at the center provide continuing feedback on the validity of each contributing program. Program ownership becomes secondary to issues of the alliance; most important among them is to maintain quality in technology education. The second design factor is the influence of continuously bringing industry representatives in the learning environment. The onsite utilization of facilities has already generated beneficial arrangements for the college. For example, Miller has agreed to place current model welders at the facilities on the HEAT campus. This is not a one time gift, but, rather, a revolving loan of equipment that will put only current models in the lab so that Miller can train its sales force and consultants there. The result is a shared benefit for both the HEAT Center and Miller.

Impact

Technology is fundamentally changing learning through shifting control from the instructor to the learner. The acknowledgment of that reality allows institutions to focus on design that supports the learner first. Integrating dynamic systems and technologies to facilitate learning is required. The HEAT Center at Lowry is a world class model for that design.

Although learning environment has been defined historically as one setting, in the future, it will be more appropriately described as multiple locations. Learning will shift from a one level, one discipline, one instructor campus experience to a complex web of linked experiences. Defined as a "meta-settings web" within NDTYI, a model emerges where each student occupies a unique web of learning settings that expands around the individual. Moving across the support of the web of settings, the student manipulates personal assets in the midst of multiple communities—each contributing to the learning process. The model provides a visual demonstration of how control of learning is shifting from the instructional provider to the learner. For learners, influence on the system is rapidly expanding as more than one option becomes available.

The resulting impact on design shifts primary attention to connectivity as opposed to isolation. For institutions, the emerging challenge is not keeping the competition out. The challenge is keeping the students in. Competition will not be defined by geographical boundaries or institutional similarity, but, instead, by student satisfaction. TYIs will no longer be competing primarily with the community college next door. Primary competition will be defined by those national or global entities that provide the best value as perceived by students and stakeholders. In creating that environment, technology becomes the core resource for competitiveness.

The HEAT Center has demonstrated that the concept of a centralized investment in technologies for education is a viable, efficient use of resources. Investment in technology learning environments is costly. Intensive use of that environment builds support for operations. For education that means sharing technology resources among multiple programs, a concept that is central to operations of the HEAT Center at Lowry. Distributed programs using centralized advanced technologies leverages investment in equipment, allows for integrated programs of learning, centralizes industry resources, and increases

access to excellence in instruction. What initially may be viewed as primarily an economic requirement also turns out to be a strong benefit educationally.

Future Directions

The Master Plan for the HEAT Center identifies the following five strategic objectives:

1. Quality
2. Opportunity
3. Cooperation
4. Commitment
5. Investment

Through these strategic objectives, the HEAT Center proposes to address curricula and instruction, access, educational effectiveness, articulation, resource utilization, and competitiveness. Linked to technology, the environment being established reflects the learning environment specifications identified in *New Designs for Two-Year Institutions of Higher Education*. The result is an anticipated head count of more than 10,000 individuals enrolled by the year 2006. And, more importantly, Colorado will be prepared to become increasingly competitive in the areas of applied biotechnology, advanced manufacturing, technology, and the telecommunications industry.

A benchmark summary is identified in the HEAT Center's (1997) *Annual Summary*. For Colorado, the learning environment will be technology oriented and will incorporate technology into the learning process now and into the future:

> Colorado's new technology learning environment will be defined by a strong application component for rapid response to private sector need for a workforce with knowledge and skills to apply sophisticated and interdisciplinary technology for competitive production and services. With the Knowledge Era and the Information Age forcing continuous learning for all career paths and jobs, the HEAT Center at Lowry will be a primary Colorado technology resource for access of new knowledge, information, and applications. (p. 1)

Design Implications

Based on the findings of the benchmarking study of the learning environment with a special focus on learning technology, the following implications for the design of TYIs appear warranted:

- *Model Use of Technology in Learning:* One of the most powerful pedagogical strategies is teaching by example. The NDTYI design specifications for learning outcomes point clearly to technological competence as a learning expectation important to work, community, and family roles and responsibilities.

- *Form Strategic Alliances:* Learning technology should facilitate linking learning and community development and help offset the costs of technology through mutual benefits and shared costs. Alliances need to balance retaining the advantages of local presence and identity with more centralized resource strategies assuring affordability.

- *Market Locally, Nationally, and Internationally:* Using learning technology provides the opportunity to ignore geographic boundaries.

- *Use a Broad Meaning of Technology:* Technology is more than computers. A broad array of tools and equipment form the meaning of technology in the broader society and a similar conception is needed in the educational institution.

- *Plan a Regenerative System:* The challenge regarding leaning technology is how to keep it up-to-date along with keeping the curriculum and staff competence up-to-date. Planning for learning technology must focus on regeneration and sustainability over the long term.

- *Present an Invisible Infrastructure:* To be most effective, the agreements, networks, policies, procedures, and information systems undergirding the alliances needed to take advantage of technology in learning should be invisible to the learner. The learner should not have to worry about where to register for a learning experience, who to pay, and how the experience relates to a similar experience obtained in a different way.

- *Link Learning and Community Development:* Part of sustaining regenerativity, meeting the specifications for the desired learning process, and reaching promised learning outcomes is closely linking learning with community development. Technology provides a means to enhance these linkages in powerful ways.

- *Organize into a Network of Learning Enterprises:* Small, focused, and responsive learning units contribute in significant ways to building learning communities, building productive alliances, and achieving some of the benefits of learning technology.

- *Increase Access to Learning:* Learning technology must significantly improve access to learning in order to offset its costs.

- *Support Learner Managed Learning:* To be a feasible goal, personalizing lifelong learning will mean that learners are skilled at managing their own learning—technology can help make this possible.

- *Enhance Connectivity:* Technology can be used to link learners, learning resources, and learning settings to increase the access to and quality of learning the learning experience.

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CHAPTER SIX:
BENCHMARKING LEARNING FINANCE*

In order to remain viable, colleges must be financially sound. Small colleges, in particular, have been dramatically affected by the reduction in the level of public support for higher education that has taken place in the past several years. They are required to offer the same level of services to their constituents with significantly fewer resources. Small colleges are often held to the same level of tuition increases regardless of their size or location. These colleges are often located in rural communities and tend to be even more sensitive to tuition increases due to their smaller and often less affluent population base. It is essential that small colleges remain open and continue to thrive. They are vitally important as points of access to higher education and as centers of economic development. The purpose of this benchmarking study is to identify and describe the innovative and creative financing methods used by a small, public two-year college in an effort to remain viable and vigorous into the 21st century.

Site Selection

The design specification for learning finance proposed in NDTYI (see Exhibit 5) served as the basis for selecting Sauk Valley Community College (SVCC) located in Dixon, Illinois, as the site for this study. The financial process at Sauk Valley was found to be particularly responsive to the following NDTYI design specifications:

- *Supports Reengineering and Innovative Options:* The learning finance process at SVCC encourages the flexibility, autonomy, and courage to experiment with and redesign institutional processes.

- *Allocates Resources Based on Value-Added:* Learning finance at SVCC ensures that resources get to the places in the institution which add the most value in terms of learning signature and outcomes.

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* This chapter was written by Kathy Hefty. Kathy Hefty is the Business Manager for Pine Technical College, located in Pine City, Minnesota. She is also a doctoral student in the Leadership Academy for Two-Year Institutions of Higher Education at the University of Minnesota and this research is part of her doctoral study project.

- *Stabilizes Funding Patterns:* At SVCC, learning finance provides a continuous and dependable flow of resources with both a short- and long-term view.

Exhibit 5
Design Specifications for Learning Finance

- *Aligns with Learning Context, Signature, Outcomes, Process, Organization, Partnerships, Staff, and Environment:* Learning finance pays close attention to the design specifications for previous design elements.
- *Integrates Local, State, National, and International Goals, Planning, and Resources:* Learning finance brings together multiple sources of funds and enhances flexibility in use of resources.
- *Links Risk, Responsibility, Performance, and Reward Everywhere:* Learning finance ensures constant accountability, closely relates performance to rewards, and encourages entrepreneurship.
- *Supports Re-Engineering and Innovative Options:* Learning finance encourages the flexibility, autonomy, and courage to experiment with and redesign institutional processes.
- *Uses Partnerships as a Standard Way of Doing Business:* Learning finance constantly reminds and reinforces attention to controlling costs and enhancing revenues through partnerships.
- *Allocates Resources Based on Value-Added:* Learning finance ensures that resources get to the places in the institution which add the most value in terms of learning signature and outcomes.
- *Stabilizes Funding Patterns:* Learning finance provides a continuous and dependable flow of resources with both a short- and long-term view.

In using these specifications as a guide to benchmarking TYIs, it is important to take account of existing financial management standards and practices. Site selection was a matter of combining the NDTYI design specifications with published financial indicators as outlined below.

Recently, KPMG Peat Marwick LLP (1996) was engaged by the U.S. Department of Education to conduct a financial ratio analysis project, the purpose of which was to develop a methodology to be used as an initial screening device to identify financially troubled colleges. The methodology that they developed takes into account an institution's financial condition, its organizational structure and mission, and the accounting and reporting requirements to which it is subject. Their final recommendation was to use three ratios to assess a college's financial position. For the purposes of this study, I calculated

two of these ratios for small, public two-year colleges throughout the country in order to identify those colleges that appear to be the most financially viable. The ratios that I calculated were the primary reserve ratio, which measures fund balance as a percentage of total expenditures, and the net income ratio, which measures net income as a percentage of total revenue. Accumulated net income, or fund balance, provides additional resources that allow an organization to maintain a stable funding pattern—one of the NDTYI design specifications for learning finance. I did not calculate the viability ratio because it involves the measurement of plant indebtedness, which many of the colleges do not have. One of the weaknesses of Peat Marwick's financial analysis ratio project is that it does not take into account expenditures per student, which is often negatively correlated with the fund balance of a college. Based on the value of the above ratios, a threshold factor determined by Peat Marwick was assigned to each college, which was then weighted 90% to the primary reserve ratio and 10% to the net income ratio, to arrive at a product, the sum of which was used to assign each college to a category, with category I being the most financially sound and category IV being the least financially sound institutions. I obtained the financial information necessary to compute these ratios from the most recent Integrated Postsecondary Education Data System (IPEDS) report available from the U.S. Department of Education (1994).

Site Background

The following case study is based on information obtained during an interview with Jami Bradley, Vice President of Administrative Services of SVCC, on August 7, 1997. SVCC was built during the late 1960s and the first classes were held during the 1970-1971 academic year. It was built without an administrative wing, with the intention to add it at a later date. This wing has not been built and there have been no major building projects at the college since its original construction.

The State of Illinois has a Board of Higher Education, the IBHE, which oversees both two- and four-year institutions. In addition, Illinois also has a Community College Board, the ICCB, which is involved only with TYIs. Illinois is divided into 39 districts, each served by a community college, although some colleges have more than one campus. Students are assigned to districts based on their place of residence. As a result, there is little competition for students. If students would like to enroll in a program that is not offered at

the college located in their district, they are allowed to attend another college, however, the college in their district is required to reimburse the college in which they are enrolled. Illinois community colleges cannot own and operate dormitories; however, some colleges have built dormitories on adjacent land that are managed by a third party.

SVCC's closest four-year competitors are Northern Illinois University located in DeKalb and Western Illinois University located in Macomb. There are also private four-year institutions located in Rockford and Galesburg. A number of area students also attend Southern Illinois University or institutions located in Chicago, which is approximately two hours from Dixon.

The college has had three presidents. The current president has been in his position for ten years. There are three vice presidents, one each in the areas of instructional services, student services, and administrative services, with directors of each functional area. This structure has remained fairly stable over the last several years. The only exception is that academic programs had historically been led by faculty who served as chairpersons, but are currently being led by deans who function solely in an administrative capacity.

The college has approximately 20 full-time and four part-time administrators; 60 full-time and 30 part-time faculty; and 60 full-time and 15 part-time professional, clerical, and maintenance staff. Only the faculty are unionized. The college has auxiliary bookstore and childcare operations. Its food service is operated by an independent contractor. It has a credit-based unit of instruction and is organized on a semester basis with two summer sessions, one intensive two-week session, and a regular ten-week session. There is an increasing amount of interest in year-round instruction due to welfare reform.

There are approximately 15,000 full-time equivalent students enrolled at the college with a headcount of approximately 2,700 and 45,000 credit hours. SVCC is one of the smallest community colleges in the state. Enrollment has been fairly stable. It spiked in 1993-1994 with the economic recession, but has now returned to normal. One recent change which affected enrollment was the break in the relationship between the college and the state correctional facility located in Dixon, which occurred the year prior to the change in the federal law which caused inmates to be ineligible for Pell grants.

Process Objectives

Illinois community colleges are required to participate in a program review process by the IBHE and ICCB (Sauk Valley Community College, 1997). Each department within each college is evaluated on a revolving five-year basis. The financial process used by the college needs to support reaching a positive response to the following review criteria:

1. Occupational Instructional Programs

   - Is there a need for the program area based on trends in enrollments, completions, job placement, and labor market demand?
   - Is the program cost effective? How was this determined?
   - List strengths of the program.
   - List weaknesses of the program.
   - List quality improvements recommended for the program as a result of the review.
   - (Optional) Describe any unique innovations recently implemented for this program area.
   - Provide the prefix and number of each curricula within this CIP and indicate its status: (1) continued with minor improvements, (2) significantly modified, (3) discontinued, or (4) scheduled for further review in the coming year.

2. Academic Disciplines

   - Is there a need for the discipline based on trends in enrollments and retention? Please explain any adverse trends.
   - Is the program cost effective? How was this determined?
   - Are all courses in the discipline articulated to satisfy general education or major field requirements? Explain exceptions.

- List quality improvements recommended for the discipline as a result of the review.
- (Optional) Describe any unique innovations recently implemented for this discipline.
- Based on the program review, will the college (1) continue the discipline with minor improvements, (2) continue the discipline with major modifications, (3) discontinue the discipline as of a certain date, or (4) other (explain)?

3. Academic and Support Programs

- Based on student participation, is there demand for the programs listed above? Please explain any low participation trends.
- Are the units cost effective? How was this determined?
- List quality improvements recommended for these programs as a result of the review.
- (Optional) Describe any unique innovations recently implemented for these program areas.

4. Overall Academic Productivity

- Did the college examine its scope of offerings in relation to institutional size, mission, and available resources? If so, what conclusions were reached?
- Did the college examine the use of staffing patterns and instructor teaching qualifications in regard to program cost and quality? If so, what conclusions were reached?
- Did the college examine faculty workloads? What conclusions were reached?
- Did the college examine its academic calendar in relation to the effective use of students and faculty time, facilities, and institutional resources? What conclusions were reached?

- Did the college evaluate its faculty development policies to ensure that they effectively and efficiently support scholarship and faculty renewal goals? What conclusions were reached?
- Did the college examine trends in resource commitments to academic support functions and technologies? What conclusions were reached?
- Has the college examined its organizational structure and processes to ensure that resource sharing is being accomplished? What conclusions were reached?

5. Administrative Productivity

- Are all administrative units and functions central to the college's mission? If not, please explain.
- If administrative expenditures per student are significantly above or below the peer group average, please provide a brief analysis of the reasons.
- Is there redundancy of functions within or across administrative or academic units? If so, please identify the areas.
- Summarize the steps the college will take to improve the efficiency of operations.

6. Public Service Productivity

- Has the college evaluated its public service offerings in light of its overall mission and institutional, regional, and statewide priorities? If so, what changes, if any, are being made as a result?
- Are all of the college's public service functions self-supporting? If not, please explain.
- Is there redundancy of public service functions within the college and/or community? Please identify the areas.
- Has the college examined the quality of its public service offerings? If so, are any being eliminated as a result?

7. Each new initiative identified as a result of this process is summarized, along with the current year and the projected five-year dollars and the source of the funds that must be invested in order to accomplish the stated goal. If initiatives are being eliminated, the current year and projected five-year dollars and the area to which those funds will be reallocated must be stated.

8. The Productivity Quality Process (PQP) also requires a special focus for Occupational Program Reviews which encompass the following:

   - Colleges with programs in which the number of graduate respondents exceeds 10, the average unemployment rate is more than the state average (5.1%), and over one-fourth of the graduates are employed in an unrelated field should closely examine these programs through the program review process, develop relevant recommendations, and take appropriate actions to either strengthen or discontinue them.

   - Programs in which more than one-third of Associate in Applied Science graduates are enrolled for further study in a related field should examine the extent of articulation currently existing and assess whether efforts are sufficient. Findings should be indicated as either a strength or a recommendation in summary reports.

   - Colleges with programs in which graduates' overall program component satisfaction rates were less than 3.9 on a five-point scale are asked to review the results of the graduate ratings to see if there are particular components that may be problematic as they perform their fiscal year program reviews. Findings should be reflected in recommendations for program improvements in summary reports.

   - Colleges with occupational survey response rates of less than 50% are asked to give special attention to increasing these rates for the coming year. These colleges should provide a brief update on their efforts to increase response rates in their program review reports.

Priority statements based on the college's strategic plan must be annually updated in the PQP and a plan to strengthen the linkages and to integrate planning, budgeting, program approval, and program review around collegewide priorities must be detailed.

In addition, faculty roles and responsibilities, to include faculty development, reward and incentive systems, and the breadth of faculty contributions; and enhancements in the use of educational technology, to include enabling activities, delivery and instruction enhancements, and community partnerships, is described. The PQP also contains an Executive Summary which includes the processes followed, the level of involvement, the priorities addressed, and the key decisions made during the year. It is concluded with a review of the key improvements in undergraduate education made at SVCC during the last five years and the plans that will be implemented within the next year to enhance undergraduate education.

In addition to the comprehensive document described above, each division of the college (i.e., instructional services, student services, and administrative services) prepares an annual report which details the accomplishments and activities of its component departments.

Key Features

The following design features stand out in characterizing learning finance at SVCC:

Stable Funding

Tuition is determined by each community college in Illinois, with a minimum rate set by the IBHE. For the 1997-1998 academic year, tuition at SVCC is $44 per semester credit, which includes a $3 activity fee used for such activities as student government, the student newspaper, fine arts activities such as theater and choir, and athletics (five men's and women's athletic activities), and a $2 technology fee. Revenue from the technology fee can be carried over from year to year.

Before the tuition rate is set each year, the Vice President of Administrative Services surveys other community colleges in the state. Statewide, the proposed 1997-1998 tuition rates range from $31 to $54 per semester credit, with an average of $42. This includes fees that range from zero to $7.50.

Since 1967, tuition has increased from $10 per semester credit to its current $44. The average increase per year was 5.2%, although there were many years without any

increases and a few with very large increases, for example, 25% in 1983 and 27.6% in 1993. The current Vice President of Administrative Services favors small incremental tuition increases each year rather than very large periodic increases.

In Illinois, community college districts levy property taxes. The general guideline is that colleges should be funded approximately one-third each by local taxes, state grants, and tuition and fees. In 1997-1998, SVCC plans to receive 37% of its funding from local taxes, 33% from state grants, 28% from tuition and fees, and the remaining 2% from sources such as facility rental and investment revenue. The college receives a small amount of federal funds such as Perkins funds, which are included as part of state funds since they flow through the state educational agency. IBHE is also beginning to implement a system of performance-based funding. At the current time, approximately 2% of each college's state funding is determined by its performance measured against predetermined goals.

The college has traditionally maintained a large fund balance, due in part to its conservative administration and governing board. The fund balance is viewed as a reserve that can be used in times of fiscal crisis and as an alternative funding source due to the revenue that is earned from its investment. In 1995, the operating fund balance was as high as $2.2 million, at which time the governing board approved the college's request to "spend it down" on technology-related expenditures. The 1997 unaudited fund balance is $1.1 million. The Vice President of Administrative Services anticipates that it will level off at this point and stated that the board would not allow it to fall below $1.0 million. Other recent changes which have affected the college's fund balance are the decisions to become self-insured, which has saved an estimated $1.2 million per year, and to install a generator to produce electricity for the campus. In addition, the college has had turnover in its Chief Financial Officer position. The individual who held this position since the college's inception left in 1991 and was replaced by an individual who remained for only three years. In 1994, the current CFO was promoted from her position as Business Manager.

Alternative Funding Sources

SVCC is currently in the process of hiring a Director of Grants, Planning, and Institutional Research. This individual will be responsible for pursuing alternative sources of funding. In addition, the college has a Corporate and Community Services department,

encompassing contract training and community education, which is active in soliciting new business.

SVCC has an active foundation that provides money for scholarships and equipment. It has a separate governing board and is led by the Director of College Relations. It participates in annual fundraising activities and has recently undertaken two successful endowment challenge grants.

Accountability in Financial Management

In March of each year, the Vice President of Administrative Services distributes documentation that must be completed by the Deans or Directors and channeled through the Vice Presidents for initial budget requests. These requests are accumulated and combined for initial review by the Vice President of Administrative Services, who then returns them to the departments with guidelines for modification. When they are returned, the Vice President of Administrative Services makes the final adjustments with input from the President and other Vice Presidents. The final budget is presented to the Board of Trustees by the President for two "readings" before it is adopted, usually in June or July of each year.

Requests for expenditures are approved by the Deans or Directors and Vice Presidents, who are held accountable for the budgets in their respective areas of authority. There is some flexibility in that overexpenditures in one department may be offset by underexpenditures in another, as long as the total expenditures remain within the approved budget. Each grant obtained by the college has its own administrator, who is responsible for the financial management of the grant. The Vice President of Administrative Services is responsible only for expenditures in her area of authority (i.e., the business office, personnel services, building and grounds, and the bookstore). However, she is informed of all equipment purchases in excess of $500 so that those purchases are included in the fixed assets of the college. Purchases over $10,000 must be approved by the Board of Trustees.

All computer-related purchases are approved by the Information Systems department in order to maintain an integrated, compatible information management system. To date, the college has purchased its computers rather than leasing them. Since the college

leases its telephone system and its copiers, the decision to purchase its computers has been made in an effort to equalize its lease payments with its equipment purchases.

Each college in Illinois has its own information system for financial reporting; however, each must provide a detailed report to the IBHE on a quarterly basis using a centrally determined chart of accounts. In addition, each college must provide program reviews and salary and unit cost studies to the IBHE on an annual basis. Unit cost studies report costs and enrollments by area and are used to determine statewide average unit costs which, in turn, are used in the allocation process.

Recognize Value of Human Resources

Salaries and fringe benefits comprise approximately 75% of the college's total budget and are determined prior to the budget being developed. As stated previously, only the faculty are unionized; however, they take the lead in determining salary increases and changes in fringe benefits. All employees of the college receive the same percentage increase each year. Leave policies are very liberal with 13 paid holidays, 11 sick days, 3 personal days, and vacation which increases each year to a maximum of four weeks per year.

The college has a competitive fringe benefit package; however, only full-time employees are eligible to participate. In 1995, for the first time, employees were required to pay for a portion (25%) of their dependent health care premium. There is a three-tiered premium, with different rates for single coverage, single plus one coverage, and family coverage. There is also a $200 deductible per year with an out-of-pocket maximum of $1,700. Dental insurance is not offered. Life insurance equal to the employee's annual salary and short-term disability insurance are provided at no cost to the employee and employees have an option to purchase additional life and long-term disability insurance.

The college offers a tuition reimbursement program in which employees and their dependents may take courses at SVCC at no cost. Full-time employees and their dependents may take courses at other institutions and have tuition of up to $150 per credit waived up to a maximum of 12 credits per year. In addition, the college offers a computer purchase program in which it purchases computers for its employees' personal use and

allows the employee to reimburse the college over a period of two years with no interest through payroll deduction.

Partnerships

The college has many shared programs with other two-year colleges. It is a member of a distance learning network that includes approximately ten institutions and is headquartered at Western Illinois University in Macomb. Western Illinois University also offers a Board of Governors program at SVCC, which is an individualized program that allows students to earn a four-year degree. Mount St. Clair and National Lewis, which are private colleges, also offer four-year degrees on the SVCC campus. Illinois is currently in the process of developing a statewide articulation agreement to facilitate the transfer of credits between institutions.

The college also partners with area school districts in such areas as distance learning, Tech Prep, and School-to-Work initiatives. It participates in an Honors Credit in Escrow program as well. This program provides an opportunity for academically talented high school juniors to earn one full semester of college credit before their freshman year in college. It consists of five general education courses starting in the summer after the student's junior year in high school and continuing through the summer following the student's senior year. Fifteen credits are earned and are guaranteed to transfer to four-year colleges. The credits are held "in escrow" for the student until he or she graduates from high school, at which time they are transferred to a four-year institution or applied toward a degree at SVCC.

SVCC has formed a partnership with General Electric in which faculty travel to General Electric and provide training to its employees. General Electric provides the college with some equipment in exchange for training for their employees. Through its Corporate and Community Services department, the college has established many relationships with business and industry.

Impact

The effective design of SVCC's financial structure is evident not only in its strong financial ratios, but also in more visible features. Upon approaching SVCC, you are struck by the immenseness of its grounds and its impeccably-maintained facilities. A walk through the building provides evidence of the college's recent and significant investments in technology. Computer and scientific laboratories are numerous, equipment is current and well-maintained, and interactive television (ITV) classrooms are prevalent.

SVCC also has an effective program review process which ensures that resources are allocated in areas that add the most value to the college. For example, occupational programs in which the average unemployment rate is greater than the state average and in which over one-fourth of the graduates are employed in an unrelated field must be carefully scrutinized and appropriate action taken to either strengthen or discontinue them. If they are discontinued, the areas to which the funds from those programs are reallocated must be delineated in the program review report. The resources provided from this reallocation of funds support re-engineering and innovation in an environment of continuous improvement.

Future Directions

SVCC will be confronting a number of challenges in the near future, including the following:

Change in Funding Sources

At the state level, there will be a number of legislative changes related to taxation. Illinois currently has a 3% income tax. The remainder of the state's education budget is funded through property taxes. There is going to be a shift away from reliance on property taxes to a greater emphasis on income taxes. There is currently a cap of 5% on the increase in the amount of revenue that a district can receive from property tax revenues from year to year.

Building Construction

At the college level, there is an increasing need for more sections of classes with fewer students in each in order to meet the demand for flexible scheduling. A number of classrooms have been converted to computer labs and distance learning classrooms, creating the need for additional classrooms. In addition, an increasing number of contract training and community education classes has created the need for additional classroom space. When combined with a desire to complete the planned administrative wing, it is likely that a building project will be considered in the near future.

Design Implications

There are a number of factors in the Illinois system of higher education which affect the fund balances of its colleges. One is its use of districts, which assigns students based on their place of residence and greatly reduces competition among colleges. Another is its combination of centralized and decentralized governance structures. One example is the IBHE, which is decentralized by the ICCB. Tuition is determined by each college, but must be within guidelines set by the state. Still another example is the ability of each college to use its own management information system with a requirement for detailed quarterly reporting using a centralized chart of accounts structure.

At the college level, SVCC also has a number of characteristics that affect its individual fund balance. The most pervasive characteristic is the conservative nature of its governing board and administration, although it appears that these individuals are not adverse to change or risk as illustrated by their decision to become self-insured. One of the criticisms inherent with an unusually large fund balance is that, in order to build such a fund balance, it is often necessary to restrict expenditures per student. SVCC has made a conscious decision to spend its fund balance down to a predetermined level in order to increase its level of technology, which will directly impact its students. The college utilizes a participative budgeting process and holds its administrators accountable for financial decisions. Intensive planning and review processes are also undertaken by college constituents in an effort to enhance its productivity and efficiency. The college does not appear to actively solicit alternative sources of funding or to enter into partnerships, possibly because it does not feel a need to do so. However, if there are significant changes in the tax structure in Illinois and/or if the college undertakes a building project in order to

increase classroom and administrative space as predicted, these sources of funding will become increasingly important.

In summary, it is apparent that SVCC's financial strength is not an accident. It is a result of a number of factors which have interacted to create a uniquely successful, financially strong two-year institution of higher education.

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CHAPTER SEVEN:
SUMMARY AND IMPLICATIONS

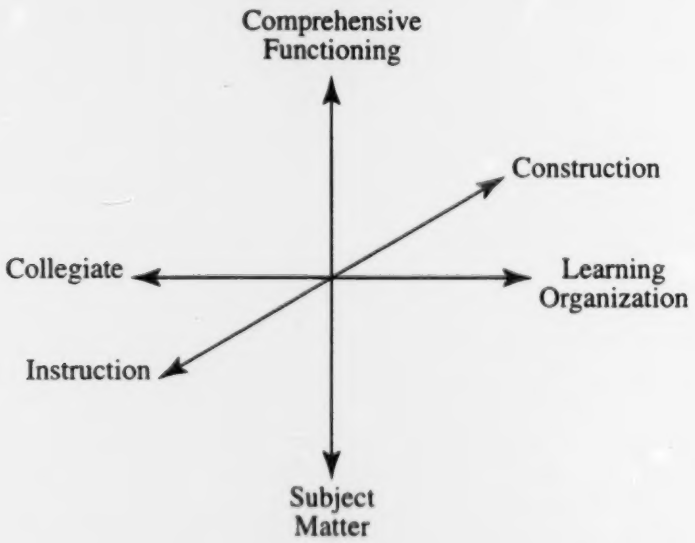
Two-year institutions which plan to use benchmark processes to facilitate change are faced with significant choices. They must select features exemplified in the benchmark processes that have a high potential for cost-effective quality improvement. If these choices are to be successful, they must represent an integrated perspective on the work of the TYI—a perspective which puts the learning process at the center of organizational change.

Summary

The design process described in NDTYI provides a helpful framework for assessing the utility and value of benchmarked processes. Each of the design specifications can be viewed as a standard against which the potential contributions of a benchmark can be evaluated. By reviewing these specifications for each design element, the TYI can make informed decisions concerning organizational change and innovation. Benchmark decisions, as viewed through the lens of NDTYI, take all design elements into account. However, the focus of the decision is on the learning process, the learning outcomes it sets out to achieve, and the learning organization that supports learning and links its results to the community.

In the NDTYI final report, these design elements are arranged in a three-dimensional space as shown on the next page (Copa & Ammentorp, in press). Each TYI has a location in the "space" of Figure 2 which defines the current configuration of learning process, learning outcomes, and learning organization. From this point of view, a benchmark opportunity represents a movement of the TYI from one point in "space" to another.

Figure 2
Positioning the Educational Organization



To evaluate a benchmark opportunity, it is necessary to consider how it positions the TYI on each axis of Figure 2. This means that each axis must be dimensioned so that features of the benchmark can be located appropriately. In the following discussion, we take four of the benchmark studies in this report (all except Learning Staff and Staff Development) and chart their position in our three-dimensional "space."

Benchmark Learning Outcomes

Although none of the four studies was directed at the learning outcomes design element, each made explicit references to outcomes either in the form of student learning, community benefits, or organizational vitality. These outcomes fall along the dimension shown below:

Subject Matter	Basic Skills Development	Team Building	Knowledge Production	Comprehensive Functioning

At the left-hand end of this continuum, the TYI would focus its learning outcomes on the various subject matters taught. At the right-hand end, outcomes would be related to the comprehensive functioning of the learner. In using this continuum, it is important to note

that there are no special values assigned to positions—a TYI can be effective at any of the points—so long as the outcomes are at the center of the learning process and supported by an appropriate learning organization. Program/organizational locations are determined by the following definitions:

- *Subject Matter:* Curricula founded on the subject matter erect barriers that prevent the integration of knowledge needed by students. These curricula also foster the academic-vocational division found in many colleges (Lewis, 1994).

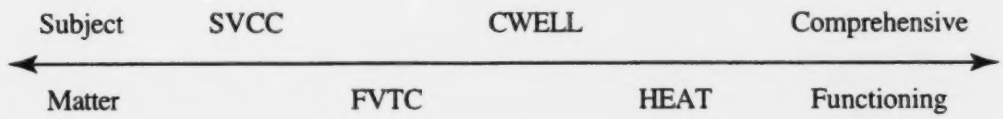
- *Basic Skills Development:* These skills are drawn from studies of the workplace and projections of future occupational demand. They lend precision to educational outcomes and draw the academy into the world of work (SCANS, 1992).

- *Team Building:* Outcomes associated with team functioning and the role of the individual in organizations adds a social dimension to the educational agenda. Such outcomes are expressive of life in global organizations where collaborative action is the only effective way to deal with complexity.

- *Knowledge Production:* Modern organizations are increasingly dependent on creating and applying new knowledge. Individuals at all levels of the organization require knowledge production competencies that build on a foundation of basic skills and team participation (Gibbons et al., 1994).

- *Comprehensive Functioning:* These outcomes recognize the social context of work and the realities of organizational, family, and community life. They focus on the competencies needed for life in a complex, global society (Hart-Landsberg, 1992).

The four benchmarked processes described in this report are located on this continuum in respect to how each sees learning outcomes. The coding scheme used is as follows: CWELL = Consortium for Workforce Education and Lifelong Learning; FVTC = Fox Valley Technical College; HEAT = Higher Education and Advanced Technology Center; SVCC = Sauk Valley Community College.



These locations are selected based on observations recorded in the four benchmark studies as follows:

1. *CWELL:* The research orientation of CWELL is clearly documented in the benchmark study. In fact, the central purpose of this program is to generate new approaches to education and to include students in knowledge production (McDonald, Huie, & Sticht, 1995).

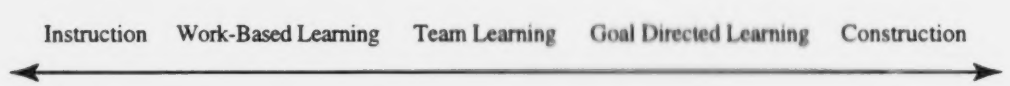
2. *FVTC:* Fox Valley Technical College strives for learning outcomes that are located between basic skills and team building. This reflects the strong emphasis on training defined by the many learning partnerships between the college and area businesses.

3. *HEAT:* The significant benchmark observation here is, "From a student perspective, the HEAT Center provides the WEB . . . (where) . . . the student operates in multiple environments continuously during the learning process." This facilitates outcomes at the comprehensive functioning level.

4. *SVCC:* The PQP Report concerning college programs shows a strong disciplinary emphasis and program evaluation is focused on traditionally defined measures of academic productivity. These point to learning outcomes on the subject matter end of this continuum (Sauk Valley Community College, 1997).

Benchmarking Learning Process

The learning process is dimensioned on the continuum shown below:



Here, the range of options suggests alternative approaches to teaching and learning. Again, there is no "best location"; the TYI must find the point best suited to the learning outcomes it has selected according to these definitions:

- *Instruction:* Lectures and other didactic teaching practices are at the center of instruction-based learning processes. These approaches grow out of the subject matters to define the traditional academy.

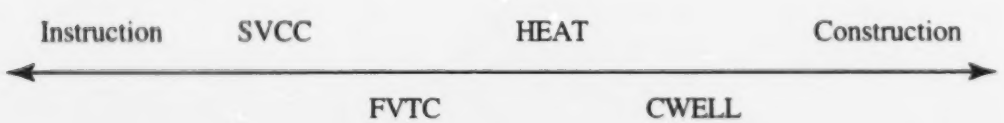
- *Work-Based Learning:* On-the-job training, apprenticeships, and the like are used to give the student a hands-on learning experience. It is a key component of School-to-Work models an important step in "unfreezing" instructional systems (Bragg, Hamm, & Trinkle, 1995).

- *Team Learning:* Collaboration is an emerging theme in all aspects of organizational life. It is no less so in learning where team efforts have been shown to be highly effective in improving student engagement in the learning process and in connecting learning to the external environment (Mathews, 1994).

- *Goal Directed Learning:* For the individual student to become adept at directing her or his own learning, each needs to develop a goal and a plan for its attainment. Goal directed learning articulates the goals of the student with the objectives of the college (Ram & Leake, 1995).

- *Construction:* All of the above learning modalities come together as students work in teams, pursuing their personal goals through collective construction of products and new knowledge. The shift in learning from instruction to construction is the fundamental change proposed in the NDTYI model (Harel & Papert, 1993).

In our four benchmark studies we find evidence to suggest the positions shown below:



1. *CWELL:* New knowledge is being constructed in this program for students, teachers, and university educators. This approach is the focus of the conference planned for the spring of 1998 where the results of CWELL are to be shared with those interested in lifelong learning.

2. *FVTC:* This college is definitely work-centered in its learning partnerships. It uses both work-based learning and team learning as it strives to meet the needs of business and industry.

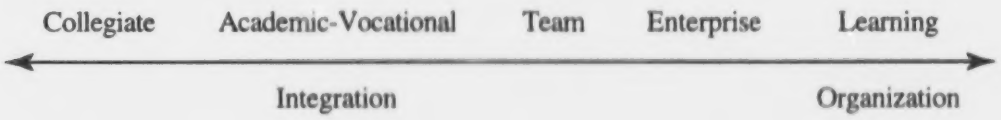
3. *HEAT:* The center promotes goal directed learning. As Goodwin (1997) states,

> The benefit is to make students successful. Through quick and easy transitions, students migrate from a two-year manufacturing curriculum into an applied engineering program. Or, a student that is not being successful in engineering is allowed to stop out with a two-year degree or transfer down to a related, less-aggressive academic program.

4. *SVCC:* Teaching and learning at SVCC lie somewhere between instruction and work-based learning. This reflects the college's academic mission as well as its link to the world of work.

Benchmarking the Learning Organization

The learning organization element of NDTYI was not directly under examination in the four benchmark studies in this paper. Nevertheless, it is possible to array the findings of these studies on the following organization continuum:



These concepts are defined as follows:

- *Collegiate:* This is a pattern of organization based on subject matter where organizational units are derived from the curriculum—it is a mirror to the model of the traditional academy (Eaton, 1994).

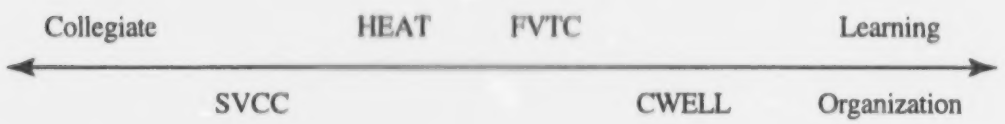
- *Academic-Vocational Integration:* Here we have an evolution of the collegiate mode of organization that essentially builds alliances across the traditional divisions in TYIs. It is a softening of familiar organizational schema to permit the formation of new fields of study and/or programs (Grubb & Kraskouskas, 1992).

- *Team:* In moving to this model, the college draws students and staff into affinity groups where common interests take the place of individual goals and traditional organization structure. Teams build learning communities that cut across inter- and intra-institutional boundaries (Smith & Hunter, 1988).

- *Enterprise:* As teams take full responsibility for educational inputs and outcomes, they become enterprises. These entities rise and fall in response to changes in the environment, market demand, and evolution of knowledge (Alfred & Carter, 1995).

- *Learning Organization:* All members of the organization and their various enterprises enter into dynamic relationships which foster learning for students and for the organization (Senge, 1990).

The four benchmark studies take the positions shown below:



The rationale for each college's location is as follows:

1. *CWELL:* Due to the research emphasis of CWELL, it exemplifies the learning organization—experimentation and innovation are the driving forces which define organization structure and operations.

2. *FVTC:* In its approach to customized training, FVTC is following the enterprise model where each "tub is on its own bottom."

3. *HEAT:* The center attempts academic and vocational integration as it links college programs and business/industry activities.

4. *SVCC:* The college is structured around academic disciplines and has a parallel administrative organization that is very much in the collegiate model.

Implications

The above studies and their locations in the TYI "space" show that there is no preferred location for the TYI of the future. In fact, we see SVCC and the San Diego CWELL Project at the opposite "corners" of Figure 2. And, both of these benchmarks are

quite successful. What this tells us is that any TYI looking to benchmark studies has the option to consider which features (if any) of the benchmark it wishes to implement.

Our analysis of these studies has not, however, shown the TYI *how* to make decisions about new ideas and/or processes. What we have done is to create a set of concepts and exemplars which can be used to contrast benchmarks with the present state of affairs in the TYI (Alfred & Carter, 1995). Thus, we have the ingredients for thoughtful consideration of alternative paradigms for the TYI (Barr, 1993; Boggs, 1993). And, through the process of benchmarking, the TYI might be able to ensure its future vitality (Commission on Innovation, 1993).

The above benchmark studies also illustrate the interrelationships or synergies among the design elements. For instance, the focus on staff and staff development at Miami-Dade Community College influenced, especially, how finances were spent, and also the learning process and the learning outcomes. And the focus on the learning environment at the Higher Education and Advanced Technology Center at Lowry specifically affected the partnerships that were formed, the learning process, and the learning outcomes. These studies indicate that change in one design element will have an influence on all of the other design elements. The design elements need to work in concert with each other for the institution to be viable in the 21st century.

Another implication of the studies in this report is that in order to implement and maintain innovative designs in TYIs, support for the new designs is needed from a number of fronts. It is important to receive support from within the institution—administration, staff, and students. Equally important is community support. Connections to the community and support from the community allow TYIs to leverage resources; keep abreast of changes in work, family, and community; and provide relevant learning experiences for students.

The benchmark studies presented here show how external changes can guide organizational transformation in a positive direction. That is, change is being viewed as a "friend" rather than an "enemy" to be resisted. And, by responding thoughtfully and sensitively to changes, the organization is improving at being true to its learning signature. At the same time, the benchmark studies illustrate the power of synergy to leverage resources and organizational improvements. For example, attention to partnerships brings

staff development opportunities at the same time as important contributions to improving the learning process and sharing learning finance.

The important point to remember is that benchmarking is only the starting point for organizational change. It opens the door to considering something other than "business as usual" by showing the TYI how other institutions serve their stakeholders in unique ways. Benchmarking marks the baseline for authentic change in that it defines processes that "work." They are not exercises in "what might be"; they are real activities that deliver outcomes demanded by students and the larger community.

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